

ATTACHMENT 3

FORMS



FOSTER WHEELER ENVIRONMENTAL CORPORATION

DAILY BRIEFING SIGN-IN SHEET

Date: _____ Project Name/Location: _____

Shift/Department: _____ Person Conducting Briefing: _____

1. AWARENESS (e.g., special EHS concerns, pollution prevention, recent incidents, etc.):

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1.	21.
2.	22.
3.	23.
4.	24.
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6.	26.
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Daily Briefing Sign-In Sheet (Continued)

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55.	70.

Give completed documentation to ESO.

SITE SAFETY BRIEFING FORM

Site: _____

Date: _____

Time: _____

OFS No.: _____

Task: _____ Health/Safety Officer: _____

Person Providing Briefing: _____

TOPICS:

- Site SHSP
- Chemical Hazards
- Equipment Hazards
- Electrical Hazards
- Heat Stress
- Personal Decontamination
- Personal Hygiene
- Employee Rights/Responsibilities
- Hazard Evaluations
- Emergency Response Procedures

PERSONS IN ATTENDANCE: (Name/Organization)

PERSONS IN ATTENDANCE: (Name/Organization)

NOTES/COMMENTS:

Date[illegible]

MEDICAL DATA SHEET

Project: _____

Name: _____

Home Telephone Number: _____

Home Address: _____

Age: _____ **Height:** _____ **Weight:** _____ **Blood Type:** _____

Name of Emergency Contact: _____

Telephone Number of Emergency Contact: _____

Drug or Other Allergies: _____

Particular Sensitivities: _____

Do you wear contact lenses? _____

Provide a checklist of previous illness or exposures to hazardous chemicals: _____

What medications are you presently using? _____

Do you have any medical restrictions? If yes, explain: _____

Name, address, and phone number of personal physician:



CORPORATE ESQ REPORT # _____

FOSTER WHEELER ENVIRONMENTAL CORPORATION**FOSTER WHEELER ENVIRONMENTAL CORPORATION
INCIDENT/NEAR MISS REPORT AND INVESTIGATION****TYPE OF INCIDENT - CHECK ALL THAT APPLY**

- | | | | |
|---|--|---|--------------------------------|
| <input type="checkbox"/> INJURY/ILLNESS | <input type="checkbox"/> VEHICLE DAMAGE | <input type="checkbox"/> PROPERTY DAMAGE | <input type="checkbox"/> FIRE |
| <input type="checkbox"/> SPILL/RELEASE | <input type="checkbox"/> PERMIT EXCEEDENCE | <input type="checkbox"/> HIGH LOSS POTENTIAL
(NEAR MISS) | <input type="checkbox"/> OTHER |

1.GENERAL INFORMATION

PROJECT/OFFICE:	REPORT #:	DATE OF REPORT:
DATE OF INCIDENT:	MILITARY TIME: ____	DAY OF WEEK: ____
FW SUPERVISOR ON DUTY:	AT SCENE OF INCIDENT: <input type="checkbox"/> YES <input type="checkbox"/> NO	
LOCATION OF INCIDENT:		
WEATHER CONDITIONS:	ADEQUATE LIGHTING AT SCENE:	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A

DESCRIBE WHAT HAPPENED (STEP BY STEP - use additional pages if necessary)**AFFECTED EMPLOYEE INFORMATION**

(Include injured person, driver/operator, or employee whose activities resulted in the incident. Use another page to provide information for additional employees)

NAME:	FWENC EMPLOYEE:	<input type="checkbox"/> YES <input type="checkbox"/> NO
HOME ADDRESS:		
SOCIAL SECURITY #:	HOME PHONE #:	
JOB CLASSIFICATION:	YEARS IN JOB CLASSIFICATION:	
HOURS WORKED ON SHIFT PRIOR TO INCIDENT:	YEARS WITH FWENC:	AGE:
DID INCIDENT RELATE TO ROUTINE TASK FOR JOB CLASSIFICATION: <input type="checkbox"/> YES <input type="checkbox"/> NO		

INJURY/ILLNESS INFORMATION

NATURE OF INJURY OR ILLNESS:

OBJECT/EQUIPMENT/SUBSTANCE CAUSING HARM:

FIRST AID PROVIDED: ☐ YES ☐ NOIF YES, WHERE WAS IT GIVEN: ☐ ON SITE ☐ OFF SITE

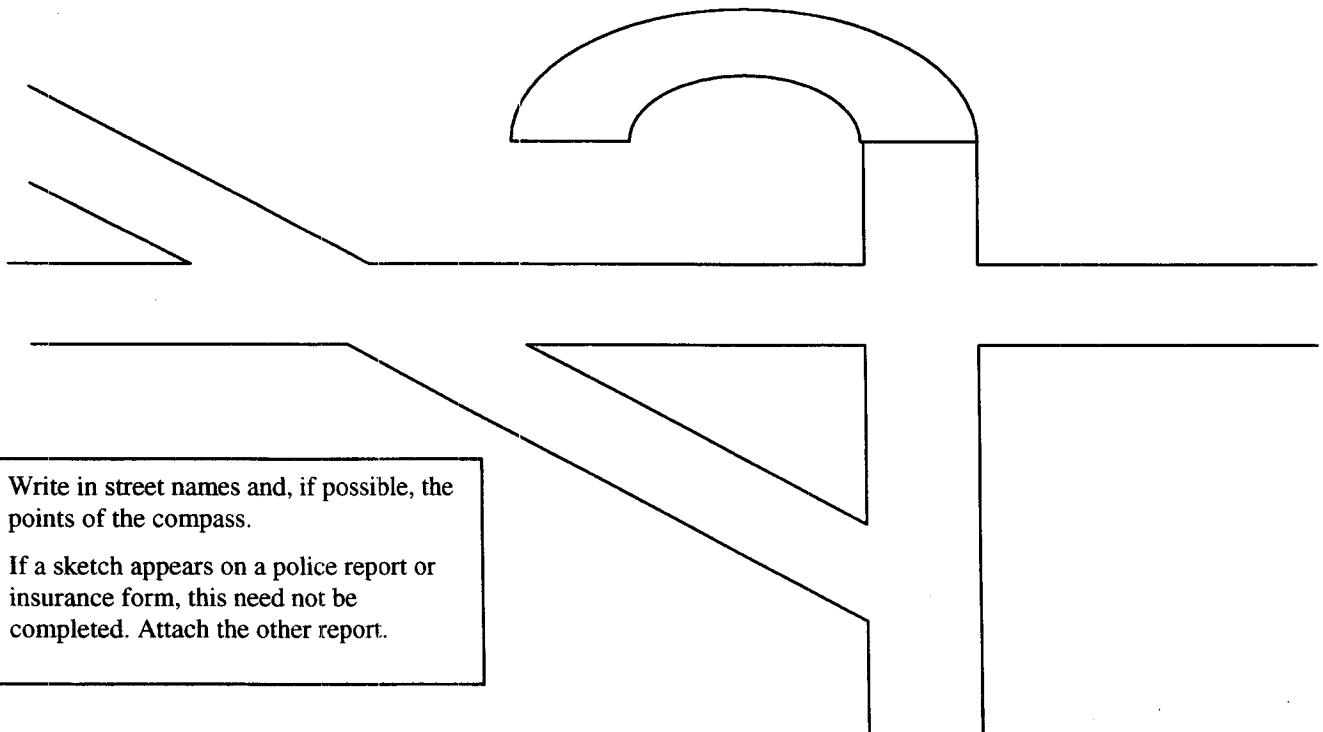
IF YES, WHO PROVIDED FIRST AID:

WILL THE INJURY/ILLNESS RESULT IN: ☐ RESTRICTED DUTY ☐ LOST TIME ☐ UNKNOWN

MEDICAL TREATMENT INFORMATION		
WAS MEDICAL TREATMENT PROVIDED?:	<input type="checkbox"/> YES	<input type="checkbox"/> NO
IF YES, WAS MEDICAL TREATMENT PROVIDED:	<input type="checkbox"/> ON SITE	<input type="checkbox"/> DR.'S OFFICE <input type="checkbox"/> HOSPITAL
NAME OF PERSON(S) PROVIDING TREATMENT:		
ADDRESS WHERE TREATMENT WAS PROVIDED:		
TYPE OF TREATMENT:		
VEHICLE AND PROPERTY DAMAGE INFORMATION		
VEHICLE/PROPERTY DAMAGED:		
DESCRIPTION OF DAMAGE:		
SPILL AND AIR EMISSIONS INFORMATION		
SUBSTANCE SPILLED OR RELEASED:	FROM WHERE:	TO WHERE:
ESTIMATED QUANTITY/DURATION:		
CERCLA HAZARDOUS SUBSTANCE? YES <input type="checkbox"/> NO <input type="checkbox"/> RQ EXCEEDED? YES <input type="checkbox"/> NO <input type="checkbox"/> SPECIFY: _____		
REPORTABLE TO AGENCY? YES <input type="checkbox"/> NO <input type="checkbox"/> SPECIFY: _____		
WRITTEN REPORT? YES <input type="checkbox"/> NO <input type="checkbox"/> TIME FRAME: _____		
RESPONSE ACTION TAKEN		
PERMIT EXCEEDENCE		
TYPE OF PERMIT:	PERMIT #:	
DATE OF EXCEEDENCE:	DATE FIRST KNOWLEDGE OF EXCEEDENCE:	
PERMITTED LEVEL OR CRITERIA (e.g., Water quality):		
EXCEEDENCE LEVEL OR CRITERIA:	EXCEEDENCE DURATION:	
REPORTABLE TO AGENCY? YES <input type="checkbox"/> NO <input type="checkbox"/> SPECIFY: _____		
WRITTEN REPORT? YES <input type="checkbox"/> NO <input type="checkbox"/> TIME FRAME: _____		
RESPONSE ACTION TAKEN:		
NOTIFICATIONS		
NAME(S) OF FWENC PERSONNEL NOTIFIED:	DATE/TIME:	
CLIENT NOTIFIED:	DATE/TIME:	
AGENCY NOTIFIED:	DATE/TIME:	<input type="checkbox"/> NOT REQUIRED
CONTACT NAME:		
PERSONS PREPARING REPORT		
EMPLOYEE'S NAME: (PRINT)	SIGN:	
EMPLOYEE'S NAME (PRINT)	SIGN:	
SUPERVISOR'S NAME: (PRINT)	SIGN:	
NOTE: Supervisor to forward a copy of Incident Report to immediate supervisor, PESM, ESS or ESC, and other personnel as identified in Table 1 of this procedure ASAP, but no later than 24 hours.		

INCIDENT SKETCH

VEHICLE INCIDENTS



Write in street names and, if possible, the points of the compass.

If a sketch appears on a police report or insurance form, this need not be completed. Attach the other report.

INVESTIGATIVE REPORT

DATE OF INCIDENT: _____

DATE OF INVESTIGATION REPORT: _____

INCIDENT COST: ESTIMATED: \$ _____		ACTUAL: \$ _____	
OSHA RECORDABLE(S): <input type="checkbox"/> YES <input type="checkbox"/> NO		# RESTRICTED DAYS _____ # DAYS AWAY FROM WORK _____	
CAUSE ANALYSIS			
Was the activity addressed in an AHA?		<input type="checkbox"/> YES (Attach a copy) <input type="checkbox"/> NO	
IMMEDIATE CAUSES – WHAT ACTIONS AND CONDITIONS CONTRIBUTED TO THIS EVENT? (USE NEXT PAGE)			
BASIC CAUSES - WHAT SPECIFIC PERSONAL OR JOB FACTORS CONTRIBUTED TO THIS EVENT? (USE NEXT PAGE)			
ACTION PLAN			
REMEDIAL ACTIONS - WHAT HAS AND OR SHOULD BE DONE TO CONTROL EACH OF THE CAUSES LISTED? INCLUDE MANAGEMENT PROGRAMS (SEE ATTACHED LIST) FOR CONTROL OF INCIDENTS IF APPLICABLE.			
ACTION	PERSON RESPONSIBLE	TARGET DATE	COMPLETION DATE
PERSONS PERFORMING INVESTIGATION			
INVESTIGATOR'S NAME: (PRINT)	SIGN:	DATE:	
INVESTIGATOR'S NAME: (PRINT)	SIGN:	DATE:	
INVESTIGATOR'S NAME: (PRINT)	SIGN:	DATE:	
MANAGEMENT REVIEW			
PROJECT/OFFICE MANAGER (PRINT)	SIGN:		
COMMENTS:			
PESM or ESC (PRINT)	SIGN:		
COMMENTS:			
NOTE: Attach additional information as necessary. Supervisor to forward copy of Investigative Report to the PM or OM, PESM or ESC ASAP, but no later than 72 hours after the incident. A copy shall be sent to the Director, Health and Safety Programs within 24 hours of completion of the report.			

EXAMPLES OF IMMEDIATE CAUSES

SUBSTANDARD ACTIONS

1. OPERATING EQUIPMENT WITHOUT AUTHORITY
2. FAILURE TO WARN
3. FAILURE TO SECURE
4. OPERATING AT IMPROPER SPEED
5. MAKING SAFETY DEVICES INOPERABLE
6. REMOVING SAFETY DEVICES
7. USING DEFECTIVE EQUIPMENT
8. FAILURE TO USE PPE PROPERLY
9. IMPROPER LOADING
10. IMPROPER PLACEMENT
11. IMPROPER LIFTING
12. IMPROPER POSITION FOR TASK
13. SERVICING EQUIPMENT IN OPERATION
14. UNDER INFLUENCE OF ALCOHOL/DRUGS
15. HORSEPLAY

SUBSTANDARD CONDITIONS

1. GUARDS OR BARRIERS
2. PROTECTIVE EQUIPMENT
3. TOOLS, EQUIPMENT, OR MATERIALS
4. CONGESTION
5. WARNING SYSTEM
6. FIRE AND EXPLOSION HAZARDS
7. POOR HOUSEKEEPING
8. NOISE EXPOSURE
9. EXPOSURE TO HAZARDOUS MATERIALS
10. EXTREME TEMPERATURE EXPOSURE
11. ILLUMINATION
12. VENTILATION
13. VISIBILITY

EXAMPLES OF BASIC CAUSES

PERSONAL FACTORS

1. CAPABILITY
2. KNOWLEDGE
3. SKILL
4. STRESS
5. MOTIVATION

JOB FACTORS

1. SUPERVISION
2. ENGINEERING
3. PURCHASING
4. MAINTENANCE
5. TOOLS/EQUIPMENT
6. WORK STANDARDS
7. WEAR AND TEAR
8. ABUSE OR MISUSE

MANAGEMENT PROGRAMS FOR CONTROL OF INCIDENTS

1. LEADERSHIP AND ADMINISTRATION
2. MANAGEMENT TRAINING
3. PLANNED INSPECTIONS
4. TASK ANALYSIS AND PROCEDURES
5. TASK OBSERVATION
6. EMERGENCY PREPAREDNESS
7. ORGANIZATIONAL RULES
8. ACCIDENT/INCIDENT ANALYSIS
9. PERSONAL PROTECTIVE EQUIPMENT

10. HEALTH CONTROL
11. PROGRAM AUDITS
12. ENGINEERING CONTROLS
13. PERSONAL COMMUNICATIONS
14. GROUP MEETINGS
15. GENERAL PROMOTION
16. HIRING AND PLACEMENT
17. PURCHASING CONTROLS

NOTIFICATION REMINDER

Fatalities or hospitalization (admittance) of three or more individuals requires notification to OSHA within 8 hours. Contact the Director, Health and Safety Programs or Director, ESQ Programs to make the notification. If unavailable, the senior operations person on site should make the notification.

Incident/Near Miss Report and Investigation Instructions

General: The incident report (pages 1 and 2) must be completed within 24 hours. Do not delay the report if any information is unknown. It can be provided later by revising the Report.

Type of Incident: Check all that apply. A High Loss Potential (Near Miss) incident is one that does not result in loss, but under slightly different circumstances, could have resulted in an OSHA Recordable injury, spill, release, permit exceedence, fire, or vehicle/property damage in excess of \$500. All High Loss Potential (Near Miss) incidents are to be investigated.

General Information

Project/Office: If the incident occurs on a delivery order contract, give the contract/program name, DO# and location. If the incident occurs on a C&E field project, give the Office location managing the project as well as the project/location.

Report No.: Optional numbering field for offices/projects.

FW Supervisor: The Foster Wheeler Supervisor responsible for the work effort involving the incident. Do not give a subcontractor supervisor or craft foreman name. If a Foster Wheeler Supervisor was the Affected Employee, this field should contain the name of his or her supervisor. The Supervisor is the project supervisor if the incident happens on a project, or the administrative supervisor if the incident happens in the office. E.g., a geologist, acting as an FOL gets injured on a job site, or in a motor vehicle in the course of project work. The FW Supervisor is most likely the Project Manager. If the same geologist gets injured lifting a box in his office, the FW Supervisor is likely the Office Science Lead.

Location of Incident: The specific location on the project, in the office, or off-site location.

Weather Conditions: Temperature, precipitation, approximate wind speed and direction, cloud cover, relative humidity. This information may be included in the description section, and must be given in detail whenever it is a factor in the cause or impact, e.g., spill, release, heat stress, wind blown material.

Describe What Happened: This section must be completed in sufficient detail to adequately describe the events and conditions leading up to and resulting from the incident. Try to answer the questions who, what, where, when, and how. This information is then used to determine why (cause). Provide details such as work objective, procedure being used, body position, and PPE. Include diagrams or sketches for all incidents involving vehicles/equipment and other incidents where they aid in providing detail or perspective. Consider attaching photographs. Follow the guidelines in Practical Loss

Control Leadership, and consider the impact of each of the following:

P - People
E - Equipment
M - Material
E - Environment

To do an effective job, a visual inspection of the scene is usually necessary along with private interviews of affected employees and witnesses.

Where appropriate, use terms indicating the type of contact, e.g., struck by; struck against; fall from elevation; fall on same level; caught in; caught between or under; caught on; contact with; overstress; equipment failure; environmental release; fire.

Affected Employee Information

FWENC Employee: Direct hire, whether professional, administrative, or craft; full-time or part-time; permanent or temporary. If the affected employee is not a FWENC employee, give the name of the employer and business relationship (e.g., client, subcontractor) in the description section above.

Hours Worked on Shift Prior to the Incident: Only include the amount of time the employee worked that shift or day prior to the incident.

Years with FWENC: For FWENC employees, give the number of years employed with FWENC. If the employee has worked for FWENC for less than a year, do not write <1. Give the answer in fraction of year, or specify the number of months, e.g., 0.1 or 1 month.

Injury/Illness Information

Nature of Injury or Illness: If the incident resulted in an injury or illness, give a brief description of the body part affected and type of injury or illness, e.g., fractured thumb, left hand; carpal tunnel syndrome, right hand.

First Aid Provided: First Aid is any treatment that does not have to be provided by a health care professional, even if it is. E.g., a laceration that is cleaned and bandaged in a clinic may constitute first aid, if sutures are not given.

Will the Injury Result In: Do not delay the report if this information is unknown.

Medical Treatment Information

Was Medical Treatment Provided? Medical treatment is that treatment that must be provided by a licensed medical practitioner, e.g., sutures, prescription medication, etc.

Type of Treatment: This information is important in determining OSHA recordability, since some forms of treatment would not constitute a Recordable case (e.g., one-time administration of prescriptions, negative diagnostic exams). Attach a copy of the treating professional's statement/work release.

Vehicle and Property Damage Information

Vehicle/Property Damaged: For vehicles, indicate VIN and whether it is company owned or leased, business trip rental (Avis) or owned by others.

Description of Damage: Be specific as to the identity of damaged part, location and extent.

Spill and Air Emissions Information

Substance Spilled or Released: For pure substances, list materials by common name/chemical. For wastes, indicate waste code. For mixtures or contaminated media, provide contaminant name, CAS No., concentration.

RQ Exceeded? Reportable quantity. Contact your ESQ representative for guidance. Specify the RQ for the material, whether you answer yes or no.

Reportable to Agency? If yes, specify the federal, state or local agency that must be provided with verbal and/or written notification.

Written Report? Answer yes if the release requires a written report to be filed and note the time frame.

Response Action Taken: Describe the mitigation efforts, as well as any reports made, beyond initial notification.

Permit Exceedence

Type of Permit: List name of permit including the agency name where applicable (e.g., NPDES, PSAPCA NOC)

Date of Exceedence: Specify date exceedence occurred (e.g., date discharge in excess of permit limits occurred)

Date First Knowledge of Exceedence: Specify date when first knew there was an exceedence (i.e., date analytical received). This date may be different from the date of the exceedence listed above.

Permitted Level or Criteria: List numerical discharge or emission limit or narrative criteria specified in the permit

(e.g., 20% opacity limit, Best Management Practices (BMP) implementation per SWPPP).

Exceedence Level or Criteria: Specify actual numeric discharge/emission limit or narrative criteria which was exceeded (e.g., 22% opacity, failure of BMPs (silt fencing collapse) per SWPPP)

Exceedence Duration: Specify time frame by date and hours (using military time) during which exceedence occurred.

See "Spill/Release Information" (above) for description of remaining questions.

Persons Preparing Report

Employee's Name: The affected employee described on page 1 should review the report and sign here, as well as other employees witnessing or involved in the incident.

Supervisor's Name: The FWENC Supervisor must review and sign the report indicating agreement. The FWENC Supervisor and the Investigator (next page) should be the same person.

Investigative Report

Report No.: This is the same as the project/office optional report number from page 1 of the Incident/Near Miss Report.

Date of Investigative Report: This date should be within 72 hours of the incident. In cases where the investigation is not completed until a later date, submit the incomplete report within the 72 hours, and a revised report should be submitted when the missing information is obtained.

Incident Cost: For all vehicle/equipment or property damage cases, an estimated or actual loss value must be entered. If an estimated value is entered, the report must be revised when the actual costs are known.

OSHA Recordables: This section should be completed in consultation with the PESM. If it cannot be determined at the time of the report, the PESM should consult with the Director, Health and Safety Programs and revise the report when a determination is made.

No. of Restricted Days: This relates to days of restricted work activity, not restrictions on motion or physical capability. If the employee is capable of doing his normal job the day after the injury and thereafter, there are no restricted days, even if the physician indicates a physical restriction. It does not include the day of the injury.

No. of Days Away from Work: The number of days after the day of the injury that the employee was scheduled to work but could not due to an occupational injury. If the treating physician releases an employee to return to work, but the

employee chooses not to come to work, do not count those days. In this case the PESM should contact the Director, Health and Safety Programs.

Cause Analysis

Immediate Causes: Determine the immediate causes, using the example on page 4. If one or more of the examples fits the circumstance, use those words in the cause description. This facilitates statistical analysis of the incident database for program evaluation/modification. However, do not confine your cause determination to the guide words. Explain, e.g., Improper Lifting – employee attempted to lift box by bending at the waist and twisting while lifting. Be sure that the incident description on page 1 is sufficiently detailed to support the causal analysis in this section. An assumption of cause (e.g., improper lifting) from the injury (low back pain) is not acceptable.

Basic Causes: Like the Immediate Causes, use the guide words in the attachment whenever appropriate and explain. For example, improper motivation may be because the correct way takes more time or effort; short cutting standard procedure is tolerated or positively reinforced; or the person thinks there is no personal benefit to always doing the job correctly.

Note: The investigator is encouraged to review the Practical Loss Control Leadership chapters on *Causes and Effects of Loss* and *Accident/Incident Investigation* before doing the causal analysis. As a check, the investigator may refer to the S.C.A.T. Chart available from the PESM.

Remedial Actions: Include all actions taken or those that should be taken to prevent recurrence. Be sure that actions address the causes. For example, training (safety meetings) may be a necessary response for lack of knowledge, but may be inadequate for improper motivation. If completion dates exceed the 72 hours reporting period, a revised report must be submitted when all remedial actions are complete.

Persons Performing Investigation: The primary investigator is the FWENC Supervisor in charge of the work where the incident occurred. Others participating in the investigation, such as the Project Manager, ESS, QC, site engineer, foreman, etc. should also sign the report.

Management Review: The Project or Office Manager and the PESM or office ESC must sign the report indicating their satisfaction with thoroughness of the investigation and the report, and their concurrence that the action items address the identified causes. This constitutes the peer review, and the report, particularly the description, should be clear to readers not familiar with the project or incident.



FOSTER WHEELER ENVIRONMENTAL CORPORATION

SITE SAFETY PLAN CHANGE APPROVAL FORM

N68711-98-D-5713

CTO: _____

Date _____ Amendment Number _____

Project Name: _____ Project Number: _____

Section of SHSP: _____ Page Number: _____

Change to read: _____

Reason for change: _____

Approvals: _____

Project Superintendent or Manager

SSHS

PESM (CIH)

ATTACHMENT 4

ALAMEDA POINT BASE-WIDE HEALTH AND SAFETY PLAN

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N44255-95-D-6030
DO No. 0095

FINAL
BASE-WIDE HEALTH AND SAFETY PLAN
Revision 0
October 30, 2001


ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RACII-02-0019



FOSTER WHEELER ENVIRONMENTAL CORPORATION

1230 Columbia Street, Suite 640
San Diego, CA 92101


Roger Margotto, CIH
Program Health and Safety Manager



Abid Loan, P.E.
Project Manager

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ABBREVIATIONS AND ACRONYMS

ABIH	American Board of Industrial Hygiene
ACGIH	American Conference of Governmental Industrial Hygienists
AHA	Activity Hazard Analysis
APR	air purifying respirator
Base-Wide Plan	Base-Wide Health and Safety Plan
Cal-OSHA	California Occupational Health and Safety Administration
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
Corps	U.S. Army Corps of Engineers
COTR	Contracting Officer's Technical Representative
CPR	Cardiopulmonary Resuscitation
CRC	Contamination Reduction Corridor
dBA	decibels, A-scale
DO	Delivery Order
DoN	U.S. Department of the Navy
EHS	Environmental Health and Safety
ESQ	Environmental Safety and Quality
ESS	Environmental Safety Specialist
FCR	Field Change Request
FOPS	Falling Object Protective System
FWENC	Foster Wheeler Environmental Corporation
GFCI	Ground Fault Circuit Interrupters
HEPA	High Efficiency Particulate Air
IR	Installation Restoration
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NAS	Naval Air Station
NIOSH	National Institute for Occupational Safety and Health
NTR	Navy Technical Representative

ABBREVIATIONS AND ACRONYMS

(Continued)

OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PESM	Project Environmental Health and Safety Manager
PjM	Project Manager
PM	Program Manager
PPE	Personal Protective Equipment
QC	quality control
RCRA	Resource Conservation and Recovery Act
RPM	Remedial Project Manager
RQ	Reportable Quantity
SCBA	self-contained breathing apparatus
SHSP	Site-Specific Health and Safety Plan
SHSS	Site Health and Safety Specialist
TLV	Threshold Limit Value
TWA	Time-weighted average
UXO	unexploded ordnance

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

Foster Wheeler Environmental Corporation (FWENC) has been contracted by the U.S. Department of the Navy (DoN) to conduct remedial actions for the cleanup of hazardous waste sites under Basic Contract N44255-95-D-6030. This Base-Wide Health and Safety Plan (Base-Wide Plan) applies to all work performed under this contract at the former Naval Air Station (NAS), now referred to as Alameda Point in Alameda, California. The FWENC Health and Safety Program for Alameda Point consists of this document, the FWENC Corporate Health and Safety Program Manual, and Site-Specific Health and Safety Plans (SHSPs) to be written for individual Delivery Orders (DOs).

1.2 APPLICATION

The Contract Health and Safety Program is applicable to all work conducted by FWENC and FWENC subcontractors under the basic contracts and/or individual DOs. Essentially equivalent or additional health and safety procedures and practices may be approved by FWENC and implemented by FWENC subcontractors where necessary. All subcontractors are required to follow the FWENC Health and Safety programs and procedures unless less restrictive or less conservative practices are approved by the FWENC Project Environmental Health and Safety Manager (PESM), who is a Certified Industrial Hygienist (CIH), and the Navy Contracting Officer. The FWENC PESH will review FWENC and subcontractor SHSPs prior to the initiation of fieldwork.

1.3 APPLICABLE STANDARDS, REGULATIONS, AND GUIDANCE DOCUMENTS

Adherence to applicable portions of federal, local, national consensus organization, and corporate health and safety standards, regulations, and guidance manuals is required during field activities. These include, but may not be limited to, the following:

- 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards, General Industry.
- 29 CFR, Part 1926, Occupational Safety and Health Standards, Construction Industry.
- 10 CFR, Part 20, Nuclear Regulatory Commission.
- State Regulations including Title 8 California Code of Regulations (CCR) California Occupational Health and Safety Codes (Cal-OSHA) and Title 24 CCR (Health and Safety Code).

- FWENC Corporate Health and Safety Program Manual.
- DoN/Marine Corps Installation Restoration Manual, August 2000.
- U.S. Army Corps of Engineers (Corps) Safety and Health Requirements Manual, EM 385-1-1, 3 September 1996.
- Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists (ACGIH), most current publication.
- Occupational Safety and Health Guidance for Hazardous Waste Site Activities, U.S. Department of Health and Human Services et al., October 1985.

1.4 SUMMARY OF MAJOR RISKS

The SHSP for each DO will describe the major risks for the specific work proposed in a project. All known or potential physical and chemical hazards that may pose a threat to the health and safety of site workers must be identified to ensure workers are adequately protected. Evaluation of work site characteristics and hazards is an ongoing process and will continue throughout the duration of the project.

There is potential unexploded ordnance (UXO) and chemical contamination in various areas of the facility. The contaminants may include fuels, solvents, metals, oils, polychlorinated biphenyls (PCBs), and pesticides. A security fence surrounds the entire facility so hazards associated with the general public are not significant.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

2.1 PROGRAM MANAGER

The Program Manager (PM) has the overall responsibility for the health and safety of site personnel at all projects under this contract. The PM will ensure that adequate resources are provided to the field health and safety staff to carry out their responsibilities as outlined below. The PM will also ensure that fieldwork is scheduled with adequate personnel and equipment resources to complete the job safely.

2.2 PROJECT MANAGER

The Project Manager (PjM) is responsible for managing all technical and business aspects of the project. This includes the development of the best technical approach and budget for the contract task order scope, managing technical, cost, schedule, and project issues as work progresses, and subcontractor oversight. The PjM will also ensure that adequate personnel and resources are available to complete the project safely. The PjM will conduct monthly health and safety inspections of the job site.

2.3 PROJECT SUPERINTENDENT

The Project Superintendent is responsible for ensuring that all work is performed in accordance with the contract requirements in a safe and healthful manner. The Project Superintendent will ensure that work crews have adequate resources to effectively conduct field activities, ensure [in conjunction with the Site Health and Safety Specialist (SHSS)] that proper protective equipment is being used by all personnel, enforce appropriate disciplinary actions when health and safety requirements are not being followed or when unsafe practices occur, and oversee work practices to verify they are in accordance with the SHSP. The Project Superintendent has the authority to suspend field activities if the health and safety of personnel are in danger.

The Project Superintendent will submit to the Navy Contracting Officer's Representative (COTR), upon request, copies of the certificates (or acceptable alternative documents) of most recent health and safety training required by 29 CFR, Part 1910.120 for all the personnel who will be working on site. Copies of the training certificates (or acceptable alternative documents) will also be kept at the work site.

2.4 PROJECT ENVIRONMENTAL HEALTH AND SAFETY MANAGER

The PESM is responsible for implementing and overseeing the Contract Health and Safety Program and to develop, implement, and approve all SHSPs. Any changes to the established Contract Health and Safety Program or SHSP is at the direction and approval of the PESM, with concurrence of the Navy Contracting Office. The PESM or designee will not necessarily be on site during all remedial activities, but will be readily available for consultation when required.

The PESM or designee is a CIH certified by the American Board of Industrial Hygiene (ABIH). The PESM supervises and directs the activities of the SHSS. The PESM has the authority to stop unsafe operations, remove unqualified personnel from the work area, and approve changes to the SHSP. Duties of the PESM include:

- Overseeing all aspects of the SHSP from development to implementation.
- Advising the SHSS on all related health and safety aspects.
- Reviewing site-specific plans for completeness and compliance.
- Reviewing other site documents as they affect health and safety (e.g., Activity Hazard Analyses, Sampling Plans).
- Reviewing and evaluating all monitoring results.
- Establishing and monitoring all related health and safety procedures through site safety inspections and audits.

2.5 SITE HEALTH AND SAFETY SPECIALIST

The SHSS will be present on site as required during the conduct of field operations and is responsible for all health and safety activities and the delegation of duties to the health and safety staff in the field. The SHSS is responsible for implementation of the SHSP, overseeing that appropriate personal protective equipment (PPE) is used relative to the hazard which may be encountered, verifying that communication systems are in place, monitoring conformance with safety and emergency response procedures, giving safety briefings, seeing that safety equipment is maintained, and conducting safety drills and exercises. The SHSS or designee is responsible for the setup and execution of decontamination procedures. The SHSS has stop work authorization, which will be executed upon determination of an imminent safety hazard or potentially dangerous situation. Work cannot restart until clearance has been authorized by the SHSS. The SHSS is responsible for maintaining the site health and safety log books.

The SHSS possesses the knowledge and experience necessary to ensure that all elements of the approved SHSP are implemented and enforced on site. FWENC employs full-time personnel as Environmental Safety Specialists (ESSs) and personnel who have been cross-trained as an ESS. The ESS is the equivalent of the SHSS. Each FWENC SHSS has a minimum of one year work experience with hazardous materials and has completed a minimum of 40 hours additional specialized training in personal and respiratory protective equipment, program implementation,

and in proper use of air monitoring instruments, air sampling methods, and interpretation of results. Every SHSS is certified as having completed training in first aid and cardiopulmonary resuscitation (CPR) by a recognized organization such as the American Red Cross Association.

2.6 SITE PERSONNEL

A list of personnel authorized to have access to the remediation or work site will be compiled and maintained on site by the SHSS. This list will include employees of FWENC, subcontractors, and representatives of governmental agencies that may require access, where possible. All authorized personnel shall meet the requirements of the contract task order SHSP and be approved by the SHSS or Project Superintendent prior to entering any exclusion zone or controlled area when potentially hazardous activities are being conducted.

Although the employer is responsible for providing a safe and healthful work place, each employee is responsible for their own safety as well as the safety of those around them. Employees will use all equipment provided in a safe and responsible manner as directed by the Superintendent. All FWENC personnel will follow the policies set forth in this SHSP and in the FWENC Health and Safety Program Manual. Each employee is responsible for reporting any injuries, incidents, and safety infractions to a project supervisor or the SHSS so treatment can be obtained and/or corrective action taken. Equipment operators are responsible for the maintenance, inspection, and safe operation of their equipment. They will report any equipment malfunctions or necessary repairs to a project supervisor.

2.7 SUBCONTRACTED PERSONNEL AND THIRD PARTIES

All subcontracted personnel are responsible for compliance with this SHSP and other applicable regulations. Subcontractor personnel must receive a briefing from the SHSS prior to unescorted access to the project site. They must fulfill the requirements established by this plan and the site-specific plans. They must acknowledge receipt of the plan and the hazard communication briefing. On-site subcontractors are responsible for providing their personnel with appropriate PPE as specified by the plan. Subcontractor and third party personnel have the authority to request a work area hazard assessment by the SHSS prior to the commencement or continuation of work.

3.0 SITE HISTORY AND PROJECT DESCRIPTION

3.1 SITE HISTORY AND PROJECT DESCRIPTION

Alameda Point is located on the West end of Alameda Island, which lies on the East side of San Francisco Bay adjacent to the City of Oakland. Alameda Point is rectangular in shape, approximately 2 miles long east to west, 1 mile wide north to south, and occupies 1,734 acres. Prior to 1930, at least two large industrial sites, a borax processing plant and an oil refinery, were located on the island near what is now the eastern end of the former NAS Alameda. The refinery was located at the site of the present-day Installation Restoration (IR) Site 13.

The U.S. Army first acquired the former NAS Alameda site from the city of Alameda in 1930 and began construction activities in 1931. The DoN acquired title to the land from the Army in 1936 and began building the air station in response to the military buildup in Europe prior to World War II. After the 1941 entry of the United States into the war, more land was acquired adjacent to the air station. Following the end of the war, the former NAS Alameda returned to its original primary mission of providing facilities and support for fleet aviation activities.

Projects at Alameda Point could include surveys, additional sampling and characterization, additional screening for UXO materials or ordnance debris, installation or removal of groundwater monitoring wells, and other work associated with restoration of the sites.

4.0 POTENTIAL HAZARDS

The SHSP for each DO will discuss the specific chemical, physical, and environmental hazards to workers on each specific site. The SHSP will discuss each contaminant and include information such as exposure limits and signs and symptoms of exposure. The SHSP will discuss site-specific physical hazards identified with the site including those associated with construction, use of heavy equipment, fire hazards, and electrical hazards. This Base-Wide Plan discusses the general hazards associated with most projects. The SHSP will describe site-specific environmental hazards, although most environmental hazards are associated with the physical location of the base and weather conditions such as heat stress, noise, and flora and fauna contact and are, therefore, described in this Base-Wide Plan.

4.1 CHEMICAL HAZARDS

The chemicals believed to be on a specific site, based on analytical data provided by previous investigations will be discussed in each SHSP. Material Safety Data Sheets (MSDS) for the contaminants and any additional chemicals found on a site or brought onto a site will be acquired and reviewed with all personnel during daily safety meetings. An attachment to the site SHSP will contain the MSDSs. The PESM and the SHSS will specify the levels of protection and air-monitoring requirements based initially on the data provided or obtained prior to remediation work. These requirements may change as site conditions are more fully evaluated when work is underway.

FWENC's protective equipment requirements combined with the requirement to wash arms, face, and hands before eating or smoking should prevent exposure through these routes. In addition, the project SHSS and project supervisors observe and warn the crew members to be aware of the initial symptoms of chemical exposure. The amount of exposure depends primarily on the specific activities undertaken and the care with which the activities are performed. A supervisor will remove any crew member from the work site and have the worker medically evaluated if the following initial symptoms persist and are unexplained by other causes (such as allergy, common cold, heat stress, etc.):

- Dizziness or stupor
- Nausea, headaches, or cramps
- Irritation of the eyes, nose, or throat
- Euphoria
- Chest pains and coughing
- Rashes or burns

4.1.1 Hazard Communication Program

The purpose of a Hazard Communication or Employee Right-To-Know program is to ensure that the hazards of all chemicals located at this field project site are communicated according to 29 CFR, Part 1926.59 8 CCR, Section 5194 regulations to all FWENC personnel and subcontractors. FWENC Environmental Health and Safety (EHS) Procedure 4-2 is the written hazard communication program. This program requires:

- **Container Labeling**--Personnel will ensure that all drums and containers are labeled according to contents. These drums and containers will include those from manufacturers and those produced on site by operations. All incoming and outgoing labels will be checked for identity, hazard warning, and name and address of responsible party.
- **MSDSs**--There will be an MSDS located on site for each hazardous chemical used or known to be on site.
- **Employee Information and Training**--Training employees on chemical hazards is accomplished through formal safety training conducted annually and informal safety meetings. Project-specific chemical hazards are communicated to employees through an initial site orientation meeting and during daily safety meetings held at field projects.

4.2 ENVIRONMENTAL HAZARDS

The SHSS or a supervisor will discuss environmental hazards associated with each site at the orientation meeting prior to start up of remediation activities.

4.2.1 Least Tern Nesting Sites

There are California Least Tern nesting sites on Alameda Point. No field activities may be conducted in these areas between April and September.

4.2.2 Weather and Heat Stress

With the possible combination of ambient factors such as high air temperature, a few days with high relative humidity, low air movement, high radiant heat, and protective clothing, the potential for heat stress is a concern. The potential exists for:

- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

The FWENC EHS Procedure 4-6 describes the heat stress management and prevention program. At 75°F, ambient temperature, the supervisor on site initiates the procedures in the program.

Heat stroke, heat cramps, and heat exhaustion are covered in detail during the 40-Hour Occupational Safety and Health Administration (OSHA) 29 CFR, Part 1910.120 (8 CCR, Section 5192) pre-employment course. In addition, this information is discussed during a safety "tailgate" meeting before each workday where heat stress may be a factor. Workers are encouraged to increase consumption of water and electrolyte-containing beverages such as Gatorade during warm weather. Water and electrolyte-containing beverages will be provided onsite and will be available for consumption during work breaks.

At a minimum, workers will break every two hours for 10 to 15 minute rest periods. In addition, workers are encouraged to take rests whenever they feel any adverse effects, especially those effects that may be heat-related. The frequency of breaks may need to be increased upon worker recommendation or decision of the SHSS and a supervisor.

The EHS procedure also describes a cold stress program; however, due to the location of the former NAS, it is unlikely that there will be a need for this program.

4.2.3 Hearing Conservation Program

On projects where noise levels may exceed a time-weighted average (TWA) of 84 dBA (decibels, A-scale), hearing protection will be made available to all exposed employees. Additionally, sound level monitoring may be conducted onsite. All FWENC personnel on project sites have annual audiograms. Personnel with a standard threshold shift will be restricted from high noise exposure or will be required to wear hearing protection at all times. FWENC, EHS Procedure 4-4, is a hearing conservation program in compliance with OSHA regulations (29 CFR, Part 1910.95) (8 CCR, Sections 5095 –5100).

4.2.4 Biological Hazards

Biological hazards may be encountered on site. Workers should anticipate the increased likelihood of encounter of these hazards, especially in and around buildings and in undeveloped outdoor areas. Animal bites and insect stings can cause localized swelling, itching, and minor pain that can be handled by first aid treatment. In sensitized individuals, however, effects can be more serious such as anaphylactic shock, which can lead to severe reactions in the circulatory, respiratory, and central nervous system, and in some cases, even death. The SHSS will identify personnel with a known reaction to bites and stings at the pre-job safety orientation meeting. Personnel will not attempt to capture any wild or semi-wild animals such as cats or rats due to the possibility of a bite or parasitic infestation.

- Poison oak causes discomfort, irritation, and inflammation of the skin. Personnel will be warned to prevent contact with unknown plants. Protective clothing worn by site personnel should reduce the probability of such exposure. Cleaning the skin thoroughly with soap and water after contact will also reduce risk of severe symptoms.
- Animal and bird droppings often contain mold, fungus, or bacteria that represent a significant respiratory hazard including lung diseases and allergies. Personnel will not touch visible droppings, and will wear gloves and Tyvek protective wear, at a minimum, when going into normally limited access areas such as crawl spaces and high ceilings that may have become refuges or nesting areas.
- The hanta virus is sometimes transmitted by rodents found in the Southwestern United States, and causes respiratory distress, sometimes with fatal consequences. Similarly rats transmit the arenavirus. Transmission of the hanta virus or arenavirus occurs with exposure to rodent droppings. Good hygiene practices such as washing hands and face prior to eating and drinking will help to minimize the potential for exposure to the hanta virus. While work is in progress, use of high efficiency particulate air (HEPA) filter cartridges and work practices that minimize generation of dust and aerosols, will help protect employees. Avoiding areas where there are concentrations of mouse droppings (hanta virus) or rat droppings (arenavirus), for example, minimizes exposure to either virus. The virus can be inhaled in the dust from areas where mice or rats have nested or left their droppings. Minimizing dust inhalation or avoiding these areas will lessen the risks of exposure. Any work in such areas should be done only with full Level C protection including, at a minimum, a HEPA air-purifying respirator. Thorough washing of hands and face after removing the PPE will further minimize the potential for exposure.
- The area may have ground squirrels. Within certain areas of California, ground squirrels are known to have fleas that are a vector for the spread of the bacteria that causes plague. Plague is treatable with antibiotics. Workers should avoid working close to any ground squirrels and when necessary wear insect repellent.
- Personnel must use extreme caution when walking through an area, around buildings, and near objects such as drums and containers where a snake is likely to rest during the daytime. If a snake is encountered, slowly and quietly back away from the snake and inform all personnel of its location. Do not attempt to move or kill a snake as certain snakes are protected under state and federal laws. In the event of snakebite, do not try to move the affected individual. Wipe off the skin, as the venom will attack intact skin. Do not suck out the venom. Do not cut open the wound. Do not apply ice or ice packs. Do not use a tourniquet. Do not administer alcohol or medications. Call for medical assistance.

4.2.5 Storm Protection

If a warning of gale-force winds is issued, take precautions to minimize danger to persons, and protect the work and any nearby property. Precautions will include closing of all openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close all openings in the work site if storms of a

lesser intensity pose a threat to property. The SSHS will ascertain predicted daily weather conditions by listening to daily weather forecasts on radio or television. If particularly ominous weather conditions are predicted, the SSHS will monitor radio broadcasts regularly or through National Weather Service reports. Workers will not enter any excavations during a rainstorm. The supervisor or SHSS will stop all work when wind speeds are 25 miles per hour or higher. The supervisor and the SHSS will assess what work procedures can be safely performed when wind conditions exceed 25 miles per hour. They will give consideration to fugitive dust and odor emissions, the safety of equipment in high winds, and protection of workers from flying debris and dust in windy conditions. No crane or boom work is permitted in winds at 25 miles per hour or higher. (Certain crane manufacturers may specify lower wind speed limitations for safe operations. The SHSS must ensure that operational limitations of these cranes are not exceeded.)

4.3 PHYSICAL HAZARDS

There are numerous physical hazards associated with a project, which if not identified and addressed, could present accidents and personal injury to the work force, as well as operational problems. In order to minimize physical hazards, FWENC has developed standard safety protocols, which will be followed at all times. Failure to follow safety protocols or continued negligence of these policies will result in discipline of the employee. The FWENC Project Rules Handbook states the Health and Safety Project Rules and Guidelines. Some of these are described in this section and in Section 10 of this plan. Any site-specific rules are stated in the SHSP. All FWENC personnel will follow these requirements as specified here and in the Project Rules Handbook. Supervisors will observe the general work practices of each worker and enforce safe procedures to minimize physical hazards. Hard hats, safety glasses, and safety boots are required in all areas of the work site, unless specifically exempted by the PESM, SHSS, or a supervisor.

4.3.1 Tripping, Slipping, and Falling Hazards

Supervisors will remind personnel and subcontractors daily to maintain sure footing on all surfaces. The supervisor and/or the SHSS will inspect all work areas prior to the start of work to look for hazards. Any personnel working six feet above any surface, including man lifts, are required to wear safety harnesses and safety lanyards. The SHSS will inspect these before use. In order to minimize tripping hazards caused by debris, job supplies, and equipment, personnel will remove this material from the work areas daily and stockpile the materials and place equipment in storage areas. The SHSS will enforce this "housekeeping" effort throughout the day. Workers will not work near the edges of excavations without fall protection.

4.3.2 Head and Back Injuries

At a minimum, workers will don hard hats, safety boots, and safety glasses prior to performing any site activities. This will prevent minor injuries caused by bumping one's head while working around and under piping and other process related structures or equipment. Personnel are

instructed in proper lifting techniques and will not lift heavy items without assistance per FWENC EHS Procedure 3-1. Each worker will not lift more than 50 pounds. Objects heavier than 50 pounds require assistance from another person. Supervisors will use mechanical lifting equipment whenever possible to minimize worker exposure to lifting hazards.

4.3.3 Falling Objects

All items raised will be slowly lowered to the ground using a grapple and/or skip bucket. No personnel will work under equipment at any time. Also, the SHSS will ensure that an adequate area is clear of personnel while the equipment is in operation. Dump truck drivers will remain in their trucks while soil and debris is placed in their trucks, if their trucks are equipped with a Falling Object Protective System (FOPS). If their trucks are not equipped with FOPS, the drivers will get out of their trucks and stand clear of the loading operation. Workers will not work under other workers who are on scaffolds or levels higher than them unless those levels have protection to prevent objects from falling on workers below.

4.3.4 Heavy Equipment and Traffic

The use of heavy equipment for debris removal, excavation, and lifting presents the greatest potential for injury to personnel. In order to minimize these hazards, the PjM and supervisor will designate routes for mobilization through the NTR and establish specific traffic patterns. All trucks and heavy equipment will have spotters for backing maneuvers. Only qualified personnel will operate heavy equipment. Those crewmembers directly involved with spotting for the operator are the only personnel allowed in the vicinity of the heavy equipment. All others will remain a safe distance away from these operations. Personnel needing to approach heavy equipment while operating will observe the following protocols:

- Make eye contact with the operator (and spotter)
- Signal the operator to cease heavy equipment activity
- Approach the equipment and inform the operator of intentions

All FWENC personnel will follow all local traffic rules. Company vehicles will yield to all bikes and pedestrians. Personnel working in areas subject to vehicular traffic (i.e. streets, parking lots, etc.) will wear orange safety vests. Flashing light or reflectorized barricades will be used for all roads that are blocked due to equipment or excavation. Coordinate all traffic management issues with the Remedial Project Manager (RPM) and facility security.

4.3.4.1 Site Pre-Inspection of Equipment

The projects will only use heavy equipment that is in safe working order. To maintain this policy, the project supervisor(s), the SHSS, and the equipment operator will inspect all equipment brought onto the project site for structural integrity, smooth operational performance,

and proper functioning of all critical safety devices in accordance with the manufacturer's specifications and safety regulations. There will be an operator's manual for each heavy equipment and vehicle. All equipment not conforming to the operational and safety requirements set forth during this inspection will not be put into service until all necessary repairs are made to the satisfaction of the inspection group. The vendor providing the equipment or contractors that bring their equipment to the projects must provide a certificate from a mechanic that the equipment has been inspected and is acceptable for use.

4.3.4.2 Operator Qualifications

Only qualified operators familiar with the equipment to be used will be permitted to operate. Subcontractors will supply proof of their operator's capability and experience to operate the equipment in a safe manner. FWENC reserves the right to remove from the project site any operator if there is a question or doubt concerning the operator's capabilities. There are specific training requirements for industrial truck (forklift) operators and for crane operators. These requirements are specified in the FWENC EHS procedures and the U.S. Army Corps of Engineers EM 385-1-1 Safety and Health Requirements Manual.

4.3.5 Electrical Hazards

In order to prevent accidents caused by electric shock, the project SHSS will inspect all electrical connections on a daily basis. The SHSS will shutdown and lockout any equipment that is found to have frayed or loose connections until a qualified electrician is contacted and repairs are made. The equipment will be de-energized and tested before any electrical work is done. All equipment will be properly grounded prior to and during all work. In addition, Ground Fault Circuit Interrupters (GFCIs) will be installed for each circuit between the power source and tool. In the event that generators are used to supply power, these generators will contain GFCIs.

4.3.6 Confined Space Entry

A confined space is any enclosed area having a limited means of egress where ventilation is not adequate to remove a toxic or flammable atmosphere or oxygen deficiency, which may exist. Examples of confined spaces include, but are not limited to, the following: tanks; boilers; vessels; bins; manholes; tunnels; pipelines; underground utility vaults; or any open top space more than four feet in depth such as pits, tubes, trenches, or vessels.

EHS Procedure 6-1 outlines procedures in detail. No confined space entry is allowed per this plan. Prior to the start and during the conduct of each DO, the PESM, the SHSS and the project supervisor(s) will identify confined spaces or confined spaces created by the nature of the work. The SHSS will identify these confined spaces and will not allow entry into these spaces. If a confined space requires entry, the plan will be modified and approved per the amendment procedure described in this Base-Wide Plan.

4.3.7 Fire and Explosion Hazards

Atmospheric testing with a combustible gas indicator must be performed to determine the potential for a flammable atmosphere. A hot work permit must be issued to control the presence of equipment or operations producing open flames or sparks. Hot work permits and procedures are found in EHS Procedure 6-5. Permits are issued by the SHSS. The SHSS must also obtain a hot work permit from the Alameda Fire Department. The SHSS must establish a fire prevention and protection program by insuring that flammable materials are properly stored and that safe work procedures and rules are followed. Smoking is not permitted anywhere on a project site except in designated areas.

4.3.8 Drilling

Any drilling will be performed in accordance with EM 385-1-1, 16.M. A survey of the job site to identify overhead electrical hazards, potential ground hazards, and underground utilities must be performed before placement of the drilling equipment. MSDSs for drilling fluids must be provided to the SHSS before the start of work. Supervisors will ensure that a call has been made to Underground Service Alert (Dig Alert) and that drawings and maps from public works are reviewed to verify that there are no underground utilities that will be disturbed by the drilling operation.

4.3.9 Overhead Electrical Hazards

Overhead power lines may present a hazard to equipment and personnel. To prevent equipment contact with power lines and to prevent arcing, adequate clearance must be maintained. For lines rated 50 kV or below, the minimum clearance between the lines and any part of the crane or load will be 10 feet. For lines rated more than 50 kV, the minimum clearance between the lines and any part of the crane or load will be 10 feet plus 0.4 inch for each kV more than 50 kV.

4.3.10 Excavation Safety

Any excavation or trenching operation that is four feet or more in depth will be performed in accordance with EM 385-1-1 and EHS Procedure 6-3. A FWENC excavation permit must be completed by a competent person before excavation commences and at least each day thereafter. This permit requires daily inspections of the operation and adjacent areas. Specific situations addressed in these inspections are possible cave-ins, indications of failure of protective systems (benching, sloping, or shoring), hazardous atmospheres and other hazardous conditions. If the competent person finds evidence of any of these situations, exposed employees will be removed from the hazardous area until the necessary precautions have been taken to ensure their safety. In addition to the excavation permit, for work in California, a Cal-OSHA Activity Notification Form for Holders of Annual Excavation Permits must be filed with Cal-OSHA for any excavation 5-feet or greater in depth into which workers will enter. FWENC has an annual permit for excavations in the state of California. Also, Dig-Alert must be notified before any

excavation work begins regardless of depth. Exploratory techniques, such as “pot-holing” will be performed to insure that any excavation near utilities can be performed safely. Dust suppression measures may include the use of a compound, which will make the soil less likely to dust or use water. However, work procedures as soil is moved and especially as it is lifted and loaded must be performed in such a way to minimize the generation of dust. For example, loaders dumping soil into a dump truck or a stockpile may have to lower the bucket as close as possible to the truck or stockpile before dumping to reduce the drop height of the soil and, thereby, reduce the amount of dust generated.

5.0 ACTIVITY HAZARD ANALYSES

Each SHSP will have a section that evaluates the risks and associated precautions for remediation activities associated with the site-specific activities. An AHA is developed for each planned activity and operation occurring in each major phase of work. This AHA identifies the sequence of work, specific hazards anticipated, and the control measures to be implemented to minimize or eliminate each hazard. This AHA is used to augment daily safety meetings intended to heighten safety and hazard awareness on the job. This pre-task briefing will be documented and may be combined with the daily tailgate safety meeting. AHAs are the focal point for safe conduct of work on a project. Since each task is described and evaluated workers should be better prepared to perform work safely.

The SHSS will discuss the risks and precautions associated with each task identified in the DO and in the work plan. Daily "tailgate" safety meetings are held at the start of each shift. Prior to the day's remediation activity the safety meeting discusses the potential chemical, physical, and environmental hazards and preventive safety measures. During a workday, if there are any changes or new conditions, the SHSS will insure that the AHA is updated and that workers review the amended AHA. Attendance is mandatory for all employees involved in the specific work.

If there are changes required due to changing conditions or requirements, the SHSP may be modified by using the change form attached to the SHSP and by obtaining the approval of the PjM or Project Superintendent, the Project SHSS, and the PESM.

6.0 PERSONAL PROTECTIVE EQUIPMENT

PPE for site workers will be selected and used based upon the existing and potential hazards anticipated and the requirements of 29 CFR, Part 1910.120 (8 CCR, Section 5192). Different levels of personal protection will be provided to workers at the site depending on specific work tasks performed. The selection of PPE requires an evaluation of chemical contaminants, concentrations of these chemical contaminants, and physical hazards that may be encountered.

The initial PPE and action levels for each site activity will be established for each DO based on available data and defined in the SHSP. As additional testing, monitoring, and background information become available, the SHSS may adjust the action levels and PPE accordingly. The PESM will be consulted for approval to changes in the action levels. The decision to upgrade or downgrade the level of protection allowed in the field and will be communicated as appropriate to all site personnel. The decision and justification for the change in level of protection will be recorded in the health and safety logbook.

The SHSP will comply with 29 CFR, Part 1910.132 (8 CCR, Sections 3380 through 3390), which states that all PPE for eyes, face, head, and extremities, protective clothing, respiratory protection devices, and protective shields and barriers shall be provided, used, and maintained in a sanitary and reliable condition. PPE is required wherever it is necessary by reason of hazards from processes or environment, chemical hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation, or physical contact.

Respiratory protection is of primary importance in the protection of employee health since inhalation of air contaminants is a potential major route of exposure. The FWENC respiratory protection program is administered pursuant to the requirements established by 29 CFR, Part 1910.134 (8 CCR, Section 5144). The SHSS is assigned responsibility as the Respirator Program Administrator for the project. Selection, use, and maintenance of PPE at the project shall be in accordance with EHS Procedure 5-1, Personal Protective Equipment, and EHS Procedure 5-2, Respiratory Protection. The SHSS may upgrade or downgrade the level of protection based on the hazard anticipated, evaluation of site monitoring data, and established action levels by the SHSP and with the concurrence of the PESM.

The EPA Level categories are as follows:

- **Level A:** Used when the greatest level of skin, eye, and respiratory protection is needed and consists of a totally encapsulated suit with supplied breathing air.
- **Level B:** Used when the highest level of respiratory protection is needed but a lesser level (than Level A encapsulated suit) of skin protection is required.

- **Level C:** Used when criteria for using air-purifying respirators are met and a lesser level of skin protection is required.
- **Level D:** Used only as a work uniform and in an area without respiratory hazards.

Level D protection is used during site reconnaissance, mobilization, geophysical survey, base line surveying, and other activities that have no potential for exposure to chemical hazards. PPE for Level D includes:

- Coveralls, cotton and/or disposable coveralls
- Boots, leather or rubber, steel toe and shank
- Rubber overboots or disposable booties (as required)
- Safety glasses or goggles
- Hard hat
- Gloves as required by task (e.g., leather work gloves)
- Hearing protection (as required)

Level C protection is used during Resource Conservation and Recovery Act (RCRA) and non-RCRA soil excavation, temporary storage, loading, backfilling and compaction, decontamination of equipment, and other activities where there is a potential for chemical exposure but where that exposure is below permissible exposure levels with the provided PPE. If air-monitoring information dictates that a higher degree of PPE is necessary, levels of protection are increased. PPE for Level C includes:

- Full facepiece APR
- National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration (MSHA)-approved air purifying respirator cartridges (approved for use with the specific types of contaminants)
- Emergency escape respirator (optional, depending on the potential for emergency conditions)
- Coveralls (inner), cotton
- Coveralls (outer), chemical-resistant, disposable (e.g., Tyvek)
- Gloves (outer), chemical-resistant (e.g., nitrile)
- Gloves (inner), cotton or nitrile
- Boots, chemical-resistant, rubber, with steel toe and shank, or Boots, leather, with steel toe and shank with chemically resistant rubber overboot
- Hard hat
- Hearing protection (optional or as required)

Level B protection is selected and implemented when it is determined through real time air monitoring and/or personnel sampling that the highest level of respiratory protection is necessary for site personnel. This level of protection is also used when the atmospheric contaminant(s) identified does not meet the selection criteria permitting the use of air purifying respirators or when contaminants are unknown. There is a possibility that this may occur for some DO specific work.

PPE for Level B includes:

- Pressure-demand, self-contained breathing apparatus (SCBA) or airline respirator (with attached 5-minute escape bottle)
- Coveralls (inner), cotton
- Coveralls (outer), chemical-resistant, disposable (e.g., Tyvek)
- Gloves (outer), chemical-resistant (e.g., nitrile)
- Gloves (inner), (e.g., nitrile)
- Boots, chemical-resistant, rubber, with steel toe and shank, or Boots, leather, with steel toe and shank with chemically resistant rubber overboot
- Hard hat
- Hearing protection (optional or as required).

Subcontractors are responsible for supplying, maintaining, their own PPE according to the manufacturers' procedures and guidelines and their own policies and procedures, which must be at least as protective as required by regulations and those procedures described in this Base-Wide Plan.

Most projects usually require the use of either Level D or Level C protection. With each level of protection there is a degree of variability or modification dependent on the specific tasks and the nature and concentration of contaminants. For example, different tasks on the same site may require gloves of different materials, length, or thickness. Variations of a level of protection will be indicated by a qualifier (e.g., "Modified Level C") and specify the modification required. Level A protection, if ever required, will require specific discussion in the SHSP.

For site work under this contract, FWENC or subcontractors will maintain protective equipment on site for use by government visitors as specified in each DO.

7.0 AIR, NOISE, AND OTHER MONITORING

The SHSS will conduct monitoring to ensure that each site worker is adequately protected. Required monitoring will be defined in the SHSP. Site monitoring and sampling may include personal air sampling, real-time air monitoring, perimeter monitoring, radiation monitoring, noise monitoring, and heat stress monitoring.

The SHSS shall have experience using the required monitoring or sampling equipment. The PESM shall ensure that each SHSS is qualified to operate all assigned instruments. The SHSS shall ensure that each piece of equipment is properly maintained and calibrated.

Personal sampling requirements will be defined in the SHSP, and will be based on potential airborne hazards and OSHA requirements. Personal sampling methods will be in accordance with NIOSH methods, OSHA instructions, or good industrial hygiene practice when established methods are not available or feasible. A laboratory accredited by the American Industrial Hygiene Association will conduct all laboratory analysis of industrial hygiene samples. Results will be compared to the ACGIH TLVs or OSHA Permissible Exposure Limits, whichever is more stringent. Results will be communicated to employees in accordance with OSHA requirements. All exposure records will be kept in accordance with 29 CFR, Part 1910.20 (8 CCR, Section 3204).

Real-time air monitoring will be used, as appropriate, to identify and quantify airborne levels of hazardous substances and safety and health hazards in order to determine the appropriate level of employee protection needed on site. Real-time monitoring may be necessary for airborne hazards such as flammable vapors, specific target compounds, organic vapors, and dust. Real-time monitoring requirements will be documented in the SHSP and based on the probability of encountering potential contaminants at each site. The PESM will establish action levels and the action required if levels should be reached or exceeded.

All instruments (both real-time and TWA) shall be calibrated according to the manufacturers' recommendations. All equipment shall be calibrated before and after use. A calibration log shall be kept to record all calibrations.

The SHSP may specify the use of colorimetric tubes for direct reading of specific contaminants. The details will be discussed and action levels established.

The need for radiation monitoring will be established in the SHSP. Radiation monitoring procedures, action levels, and recordkeeping will be in accordance with 10 CFR, Parts 20 and 29 CFR, Part 1910.1096 (8 CCR, Sections 5075 through 5076).

Noise monitoring and hearing conservation requirements will be defined in the SHSP and implemented in accordance with Procedure EHS 4-4, Hearing Conservation Program, and 29 CFR, Part 1910.95 (8 CCR, Sections 5095 through 5100).

The SHSS will ensure that all data is documented in logs or logbooks including calibration, types of calibrants used, the manufacturer, model number of instruments used, the date and time of calibration and monitoring events, the area or personnel monitored, the atmospheric conditions and weather, unique site conditions, equipment operating in area, initials of individuals performing the monitoring, and any other information which affects the data or the actions taken based on the data.

8.0 SITE CONTROL

The PjM, Project Superintendent, and the SHSS will implement site control measures at each site. These measures will consist of general site control and specific work location site control. Site control measures are specified in the SHSP for each DO.

General site control measures pertain to the overall site and may include the use of security guards, perimeter fencing, sirens, posting of warning signs, and illumination. These control measures are geared toward visitors and the general public. The Project Superintendent and the SHSS implement control measures as necessary.

Location-specific control measures are designed to control contamination and worker entrance and exit from individual work areas. Prior to the commencement of any on-site work, controlled zones of activity will be established by the SHSS. This will reduce the spread of contamination to off-site areas and protect the health and safety of workers. The controlled zones will be included in one of the following categories: 1) exclusion zone—where contamination does or could occur, 2) contamination reduction zone—where decontamination will occur, and 3) support zone—clean zone outside the contamination reduction zone. Each work zone will be clearly identified and delineated by cones, rope, fences, signs, or barricades.

8.1 EXCLUSION ZONE

The exclusion zone may include all areas within the boundaries of a contaminated work area or merely the areas immediately surrounding the site of intrusive activity. Access points are provided to the exclusion zone. During activities where the possibility of airborne contaminants being carried outside the exclusion zone exists, the exclusion zone will be expanded to include areas of possible contamination. Only designated project team members and authorized government agency personnel shall be allowed in the exclusion zone. All personnel entering the exclusion zone must wear the appropriate level of protection designated for the work area. Personnel must also meet medical surveillance requirements, training requirements, and respirator fit test requirements. All personnel exiting the exclusion zone must be fully decontaminated in the contamination reduction zone.

8.2 CONTAMINATION REDUCTION ZONE

All personnel and equipment that may have been contaminated in the exclusion zone will be subject to decontamination in the contamination reduction zone. Temporary or field decontamination stations for personnel and equipment will also be located in the contamination reduction zone as needed. The contamination reduction zone is intended to be a buffer between the exclusion zone and the support zone and will be designed to prevent the transfer of contaminants from the exclusion zone to the support zone and off site. Within this zone is

usually located a Contamination Reduction Corridor (CRC). In the CRC, workers will find decontamination equipment, supplies, and stations.

8.2.1 Decontamination Procedures

Personal hygiene practices for field personnel will be described in the SHSP. At a minimum, site workers will be provided with adequate restroom and handwashing facilities and be required to wash exposed areas of the skin (i.e., hands and face) upon exiting potentially contaminated areas. Smoking, eating, or drinking will not be allowed in exclusion zone or contamination reduction zone work areas.

The SHSS is responsible for the functional activities of the decontamination facilities and shower trailer if one is required on the site. The SHSS will train site personnel in the steps used for decontamination. The SHSS will periodically inspect for compliance with decontamination procedures and correct any deficiencies.

Separate areas will be designated for equipment decontamination and personnel decontamination. These areas will be separated to minimize contamination of the personnel in the contamination reduction zone by overspray from equipment decontamination.

8.2.2 Personnel Decontamination

Personnel departing the exclusion zone are required to proceed through a decontamination line. The following decontamination procedure is an example and will be modified to meet site-specific requirements in the SHSP:

- **Facility 1**—Segregated Equipment Drop: Drop equipment onto plastic liner or shelf.
- **Facility 2**—Boot Cover Wash/Rinse and Removal: Wash and rinse outer boot covers with detergent and water. Remove boot covers and discard into proper container for disposal.
- **Facility 3**—Boot Wash/Rinse, Outer Suit Wash/Rinse and Removal: Wash and rinse protective suits. Wash and rinse safety boots. Remove and discard outer suit and place into disposal containers.
- **Facility 4**—Outer Glove Wash/Rinse and Removal: Wash and rinse outer gloves. Remove and discard into disposal container, leaving inner gloves on.
- **Facility 5**—Respirator Removal: Decontaminate, remove, and sanitize respirator and backpack assembly. Place on the table.
- **Facility 6**—Remove Boots and Inner Gloves: Remove boots, then inner gloves and discard inner gloves.

- **Facility 7—Field Wash:** Wash hands and face with water. At shift's end, personnel are then required to enter the decontamination trailer and shower thoroughly (if a trailer and shower are required on the site).

In case of an emergency, gross decontamination procedures will be implemented and the person will be transported to the nearest medical facility immediately at the direction of the SHSS according to the Site Emergency Response Plan (reference Section 12.0). The medical facility will be informed that the injured person is on the way, and has not been fully decontaminated. The medical facilities will be notified of the potential chemicals present and of the exposure-prevention measures that can be used while treating the victim.

A commercial vendor may launder reusable protective clothing (cotton overalls). If the coveralls are contaminated with a hazardous waste, the vendor will be notified of the type of waste.

8.2.3 Equipment Decontamination

Heavy equipment, PPE, monitoring equipment, and sampling equipment may require decontamination. Procedures may be modified based on actual site conditions or DO requirements.

Decontamination of heavy equipment (including under carriage, chassis, and cab) will be performed using a high-pressure washer sprayer, and/or steam cleaner and appropriate biodegradable solvents. All equipment will be decontaminated on a pre-constructed decontamination pad designed to collect and store washings. The equipment will first be sprayed and scrubbed with water (and a low-sudsing detergent as required). Secondly, the equipment will be rinsed with water. If persistent contamination exists after cleaning based on visual assessment, other cleaning methods may be necessary. Air filters on equipment used in the exclusion zone will be removed and disposed with the materials used for decontamination if warranted. Depending on the contaminants, a simple scraping and brushing off of the equipment may be acceptable.

Outer PPE (such as protective suits, boot covers, and outer gloves) will be washed and rinsed with trisodium phosphate and water. These items will all be discarded at the end of the day. If they have become grossly contaminated during work operations, they will be changed as necessary during the day. Respirators will be sanitized by rinsing in a germicidal rinse followed by a clean water rinse, then air drying in a clean area.

Each person will be responsible for the gross decontamination of their own respirators at the end of each shift. A thoroughly trained SHSS will perform respirator maintenance.

Reasonable precautions will be taken to minimize monitoring equipment contamination. Decontamination will be accomplished using materials that will not damage the instrument(s). Delicate air monitoring and surveying equipment will be wiped off with alcohol or soap and water and protected from contamination when in use.

The following procedures will be used for cleaning sampling equipment used for chemical tests or sampling:

- Steam clean and/or pressure wash.
- Wash and scrub with laboratory grade detergent.
- Rinse with water.
- Rinse with other reagents according to the site work plan or quality control plan.

Decontaminated sampling equipment will be protected from contamination before use by wrapping with aluminum foil or placing in a clean container.

If decontamination pads are used, they will be constructed to facilitate containment and collection of all potentially contaminated water and decontamination fluids. The waste liquids will be transferred to appropriate drums, holding facilities, or waste systems. All PPE wastes generated will be bagged, labeled, and stored for off-site disposal or incorporation into other waste materials. FWENC will store waste in a manner and in an area designated by the facility. In no case will storage exceed 90 days from the start date of accumulation of the waste. Some facilities require that storage not exceed a period of time less than 90 days (e.g., 45 days). Each project manager will ensure that the specific requirements of the facility are followed.

8.3 SUPPORT ZONE

The support zone will be arranged considering accessibility, utility availability, wind direction, and line-of-sight to work. Included in this area will be the main office trailer, administration area, vehicle parking, security, toilets, water, electricity, and a break/lunch area. The support zone will be outside the contamination reduction zone and will be the area where support workers will provide assistance to workers inside the exclusion zone and contamination reduction zone. The support zone normally will begin at the exit from the decontamination line. Only clean or appropriately containerized equipment, material or personnel can enter the support zone from the contamination reduction zone.

9.0 MEDICAL SURVEILLANCE PROCEDURES

FWENC requires that site workers participate in a medical surveillance program that meets the requirements of 29 CFR, Part 1910.120(f) (8 CCR, Section 5192). The medical surveillance program, managed by the FWENC Medical Consultant, shall be instituted for the following employees:

- All employees who are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or, if there is no permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year.
- All employees who wear a respirator for 30 days or more a year or as required by 29 CFR, Part 1910.134 (8 CCR, Section 5144).
- All employees who are injured, become ill, or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation.

All workers who must enter exclusion zones or who meet the criteria listed above must provide the SHSS with a written opinion from a licensed physician attesting to the employee's fitness for duty at a hazardous waste site. A physician's written opinion of the employee's ability to wear a respirator will also be required when there is reasonable possibility that a respirator may be required for site work. The physician's written opinion must be dated within the previous 12-month period, or an alternate time period as determined by the physician, for continued work. Additional medical surveillance requirements specific to the site or site contaminants may be required and will be defined in the SHSP. The PESM will implement additional medical surveillance requirements when specified in applicable OSHA standards (e.g., the lead standard), when recommended by consulting physicians, or when considered prudent to monitor potential employee exposure.

The SHSS will maintain a file for each person on site. This file will have a copy of the physician's statement of employee's fitness for duty, the employee's ability to wear a respirator and if there are any work restrictions. The SHSS will ensure that the employee and project supervisors comply with medical work restrictions, if any. The SHSS will also ask each employee to complete a form to indicate any known allergies, prescription medications, and any other medical information that will allow the SHSS to respond to any medical emergency in an appropriate manner. Personnel will notify the SHSS regarding any medications, including over-the-counter, they are using on each day of work. The SHSS in consultation with the PESM and/or a medical consultant will determine if any medications may have an effect on a worker that would impair the ability of the worker to perform work safely.

10.0 SAFETY CONSIDERATIONS

All workers must comply with the FWENC Project Rules Handbook, Volume I and Volume II. The following are some of these rules:

The following practices will be expressly forbidden during field operations:

- Entrance onto the site or into designated restricted area(s) without formal authorization, compliance with medical monitoring and training requirements, and/or compliance with the SHSP.
- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material in any area designated as contaminated.
- Approach or entry into areas or spaces where toxic or explosive concentrations of gases, vapors, or dusts exist without prior approval of the SHSS and/or utilization of proper protective equipment.
- Facial hair, which interferes with the satisfactory fit of the mask-to-face seal of respirators, is prohibited for personnel required to wear respiratory protection equipment.
- The use/wearing of personal stereo headphones. Their use may preclude reception of audible warning signals and/or hazard communication.

The following practices are required:

- Personnel and equipment in the contaminated area will be minimized, consistent with effective site operations.
- Equipment shall be bonded and grounded, spark-proof and explosion resistant, as appropriate to minimize or prevent the ignition of flammable materials in the work zone.
- A minimum of two employees, in constant communication (either visual or voice) with each other, will be required to perform any work within the exclusion zone.

10.1 VEHICLE AND EQUIPMENT OPERATIONS

Dust suppressants will be used to the extent possible for controlling airborne dust generation to the extent possible. In addition, vehicular traffic speed on non-paved roads will be restricted to 15 miles per hour. Motor vehicles and material handling equipment assigned to this site shall conform to the requirements of 29 CFR, Parts 1926.601, and 1926.602 (8 CCR, Sections 1590 through 1596). Crews utilizing personnel transport vehicles to and from the work site shall use the vehicle's safety belts. Drivers of vehicles shall be responsible for passenger utilization of the safety belts. Personnel are not allowed to ride in the bed of pickup trucks unless there is an

approved restraint system installed and used. The Project Superintendent is responsible for maintaining a clean job site free from hazards and for providing safe access and egress from the site. Traffic cones and/or high visibility barrier tape will be utilized, where appropriate, for traffic control into/out of hazardous or restricted. Personnel will wear reflective, orange safety vests whenever working in and around vehicles and on all roads.

10.2 MISCELLANEOUS SAFETY CONSIDERATIONS

The following is a list of precautions to minimize the possibility of injury-related accidents from occurring during field operations.

10.2.1 General Information

- Be your brother's keeper. Consider what you do in terms of the hazard it may create for others.
- Ask the SHSS if you do not know how or are in doubts as to the safe way of doing your job.
- No running at any time, except in extreme emergencies.
- Throwing of any object at personnel or equipment is prohibited.
- Minimum requirements on construction sites and in shop are long pants, a shirt with the shoulders covered, and good work shoes. Torn, ragged, or frayed items should not be worn because they can catch on obstructions or machine parts, or otherwise cause you to trip or fall.
- Know where emergency exits are, and how to get to them. Do not block them with material or equipment.

10.2.2 Housekeeping

- Clean work areas and storage areas encourage better incident prevention, and make the work easier to do.
- Dispose of trash and scrap in proper containers. This includes lunch papers, soft drink cans, banding straps, wood, rags, paper cups, etc.
- Keep tools, material, and equipment stored in an orderly manner, and in their proper places. This prevents unnecessary damage, and helps you to find them when you need them.
- Keep stored material, scrap, and other tripping hazards out of roads and walkways and away from emergency equipment. If it's in a walkway and it's not moving, it does not belong there.
- Cords, cables, and hoses crossing roads or walkways are to be covered to prevent tripping or damage, or are to be supported overhead, at least 7 feet above walkways, 14 feet above roads.

10.2.3 Fire Prevention

- Control "open flame" tools and equipment.
- Protect nearby combustible materials from heat, flames, sparks, and slag by moving or covering them.
- Keep flammables in closed containers. Use safety cans.
- All site workers will have training on the use of portable fire extinguishers.

10.2.4 Personal Protective Equipment

- Head
 - Hard hats are required at all times on construction sites. They are also required at other locations where overhead hazards exist. Bump hats are not permitted.
- Eyes and Face
 - Spectacle type safety glasses are required when hitting steel on steel, grinding, drilling, sawing, vibrating concrete, etc., or when working near someone else who is creating flying particles.
- Fall Protection
 - Safety harnesses and a fall restraint system, such as lanyards, attached to an approved support point are required when working from any support or surface where possibility of falls exist, or where guardrails are not installed.
 - Tie off to a solid, approved support. Tie off as short as possible allowing no more than a 36 inches for fall.

10.2.5 Hand Tools

- Every tool is designed for a specific use. Do not misuse. Inspect daily for defects.
- Keep tools in proper working condition - clean, sharp, oiled, dressed, and adjusted.
- Mushroomed chisels, drills, etc. cause dangerous flying objects. Keep them dressed.
- Never hit hardened steel with hardened steel, such as hitting a hatchet with a hammer.
- Do not use "cheaters" to increase capacity. Get a bigger sized tool.
- Carry tools in proper sheath, belt bag, or box. Points down.
- Know how to shut it off before turning it on. No locked "on" switches on hand held power tools.
- Eye protection is required for protection from flying particles.
- Power activated tools shall be inspected daily before use for proper operation of their safety devices. You must be authorized by your foreman to operate this equipment.

- Power supply must be properly attached to tool, and to source. Electric tools must be grounded (or "double insulated").
- Check area for other people before starting tool. Warn people nearby.
- Be prepared for jamming of rotating tools. Have good footing, good balance, and watch out for nearby obstructions. Check yourself for loose clothing.
- Shut off and bleed down air hose before disconnecting air tools. Never point an air hose toward another person or yourself.
- Unplug electric cords.
- Store in safe place when not in use. Protect from weather, dirt, and water.
- Power tools must be GFCI-protected.

10.2.6 Material Hoists

- Not to be used for hoisting people.
- Secure material to prevent it from shifting.
- Use tag lines.

10.2.7 Crane

- General
 - Know the crane capacity and the weight to be lifted before lifting.
 - Be sure air space and walkway are clear before moving bridge or trolley.
- Mobile
 - Solid footing. Use outriggers with rubber-tired cranes.
 - Barricade area of swing of counterweight.
 - Keep boom, lines, and loads at least 15 feet away from electric power lines. Minimum distance increases above 50,000 volts. Power lines must be de-energized to work closer than the minimum distance.
 - The operator shall avoid swinging loads over workmen's heads. Only one signalman at any one time.
 - Equipment shall be inspected before each use and all deficiencies corrected before further use.

10.2.8 Forklifts

- You must be authorized by your supervisor before operating this equipment.
- Keep forks spread as far apart as possible. Check stability of load before moving it.
- Look in direction of travel before moving and during moving. Watch out for overhead hazards.

- Back downgrades when carrying a load.
- No riders, unless a passenger seat is provided.
- Forks are not to be used as an elevator or as a work platform.
- Lower forks all the way down before leaving the equipment.
- Do not drive along the edge of raised docks, platforms, or ramps.

10.2.9 Mechanical Material Handling

- Know the weight of the load to be moved.
- Know the capacity of the equipment to be used to move the load.
- Use tag lines to control the load. Keep tag line free of your body, and free of obstructions during movement of the load.

10.2.10 Manual Material Handling

- Leg muscles are stronger than back muscles. Lift with your legs not your back. Bend knees, keep back straight, tighten abdomen, using legs, make a smooth controlled lift.
- Plan before you lift - consider weight, size, shape, path of travel, and set down location. Get help if necessary.
- Protect your hands and fingers from rough edges, sharp corners, metal straps. Keep hands and fingers out of pinch points between the load and other objects.

10.2.11 Overhead Work

- No one is to be unprotected under overhead work.
- Erect barricades, signs, or other devices to warn people of the work overhead. Respect the barricades or signs put up by others.
- Covered walkways are needed where people must pass under overhead work.

10.2.12 Portable Ladders

- General - All Portable Ladders
 - Inspect for defects. When defects are found, the ladder is to be withdrawn immediately from use. Set ladder feet on solid foundation.
 - Only one person is allowed on a ladder at one time.
 - Use ladders for climbing -not for material skids, walkways, or workbenches.
 - Face the ladder while climbing up or down, and while working from it. Use safety harness or fall protection when falls are possible.

- Both hands are needed for climbing. Use a hand line for material.
- No metal ladders are to be used.
- Store safely to prevent damage from vehicles, materials, etc.
- **Straight and Extension Ladders**
 - Correct slope of ladder is 1:4.
 - Secure ladder from slipping. Non-slip feet on bottom, and tie off with rope at top.
 - Extend ladder 3 feet above top landing where ladder is to be used for access to the landing.
 - Do not take extension ladders apart to get two ladders.
 - Keep hands off rungs while extending or lowering extension section. Be sure latches are in place before climbing.
- **Stepladders**
 - Open fully. Lock spreaders. Do not use as a straight ladder.
 - Do not stand or step on top platform.
 - Keep loose tools off steps and top platform.
 - Tie off stepladder if longer than 12 feet.

10.2.13 Compressed Gas Cylinders

- Always keep cylinders upright. Tie off vertically with strong wire, rope or chain, or keep chained in cylinder cart.
- Do not drop or roll the cylinders.
- Use a rack for lifting cylinders to and from upper elevations. Never lift a cylinder by the control valve or a valve cover.
- Always replace valve covers when gauges are removed. Valve covers must be placed on all cylinders before they are moved.
- Store oxygen cylinders 20 feet away from other cylinders, or separate by a solid approved divider. Do not store any cylinders inside a building.
- Keep oil and grease away from oxygen valves.
- Cylinders are to be kept at a safe distance or shielded from welding and cutting operations. They are not to be placed where they can contact an electric circuit.
- Acetylene cylinders must always be stored upright.
- Use only regulators specifically approved for the type of gas in the cylinder (read the front of the gauges for this information). Never modify regulators or use adapters.

10.2.14 Welding and Burning

- **Electric**
 - Keep leads out of walkways.
 - Shield arcs to protect others from direct arc rays.
 - Remove rod from electrode holder before laying it down. Put rod butts in a container, not on the floor.
 - Proper grounding from work to machine is a must.
 - Turn off machine at end of shift.
- **Gas**
 - Keep hoses out of walkways.
 - Check area-sides and below for possible fire hazards.
 - Remove gauges at end of shift and replace cap on cylinder. Toolboxes used to store hose and gauges are to be ventilated.
 - Use soapy water when checking for leaks.
 - Before using fuel gas cylinders:
 - Always crack cylinder valve before connecting gauges to clean dirt.
 - Open cylinder valve slowly and leave wrench in position while cylinder is in use.
 - A regulator shall always be used on fuel gas cylinders.
 - The cylinder valve shall always be closed before removing regulator.
 - When fuel gas cylinders connected to gauges have a leak it will be repaired or removed from service and tray way from the work area.

10.2.15 Electricity

- No "live electrical" work is allowed without the authorization from your supervisor.
- Temporary lighting circuits require guards over the bulbs. Metal guards must be grounded.
- Keep extension cords out of water, and at least 7 feet above walkways.
- Disconnect switches must be labeled to show the equipment or service they feed. Check before operating.
- Always shut down electrical equipment before servicing, repairing, or investigating questionable function.

10.2.16 Decontamination

- **Personnel**
 - Do not walk through areas of obvious or known contamination.
 - Do not handle or touch contaminated materials directly.

- Make sure all personal protective equipment has no cuts or tears prior to donning.
- Fasten all closures on suits, covering with tape, if necessary.
- Particular care should be taken to protect any skin injuries.
- Do not carry cigarettes, gum, etc., into contaminated areas.
- Heavy Equipment
 - Take care to limit the amount of contamination that comes in contact with heavy equipment.
 - If contaminated tools are to be placed on non-contaminated equipment for transport to the decontamination pad, use plastic to keep the equipment clean.

10.2.17 Illumination

All work on site when performed outdoors must be performed during daylight hours only (1/2 hour after sunrise to 1/2 hour before sunset). If work must be performed during hours of darkness or inside buildings, the project will insure that additional lighting is provided to meet the requirements of 29 CFR, Part 1910.120 (8 CCR, Section 5192) and the EM 385-1-1, Section 7.

10.3 ERGONOMIC CONSIDERATIONS

Routine activities at the project may involve tasks that, by their nature, may subject personnel to unexpected ergonomic stresses. Examples of ergonomic stresses include:

- Muscular sprains and strains.
- Musculo-skeletal trauma from impacts or vibrations.
- Fatigue due to extended work schedules.

Caution and workload awareness should be exercised by all site personnel during project activities. Tasks which involve manual manipulation of sampling devices, chemical storage drums, shoveling, and/or prolonged exposure to vibrating mechanical equipment should be monitored by the individuals involved with them to preclude the adverse effects of ergonomic stress.

11.0 DISPOSAL PROCEDURES

The Waste Management Plan describes the handling of wastes from the project site and the management of all decontamination liquids and disposable clothing and supplies that have come in contact with contaminated materials. All disposable PPE will be treated as contaminated waste and disposed of properly. Contaminated clothing will be placed in a drum lined with a polyethylene bag. Wastewater generated on site will be stored until ready for testing and disposal. Temporary waste storage areas will be set up by each exclusion zone during the work day. This waste will then be moved to a main storage area until ready for disposal, if required by environmental personnel. All waste containers will be properly labeled and stored consistent with regulatory requirements. Contents of the containers will be sampled by trained sample technicians and sent to a laboratory to determine regulatory permitted disposal methods. Decontamination water will be contained and captured utilizing submersible pumps and/or vacuum units. FWENC will arrange for the proper disposal of all decontamination fluids, contaminated debris, soil and other waste per contract requirements. In no case will accumulation be allowed to exceed 90 days from the date that the accumulation started. FWENC has policies and procedures that require that all disposal is managed by firms that have been pre-approved by an internal review process and by the DoN.

12.0 EMERGENCY RESPONSE PLAN

There are numerous emergency services nearby in the civilian community. This plan describes response activities as they apply to Alameda Point. Site-specific response procedures, if any different, will be discussed in the SHSP. Certain information will always be repeated in every SHSP to ensure that the information is readily available and "on top." For example, every SHSP will have a table that lists all the emergency contact numbers and the map to the nearest medical facilities.

12.1 RESPONSIBILITIES

The Project Superintendent or PjM, if there is no Project Superintendent, is the primary emergency coordinator for the project. In the absence of either or both the Project Superintendent and the PjM, the SHSS is the emergency coordinator. The emergency coordinator will take charge and determine, direct and delegate personnel and resources to manage the emergency. Key responsibilities of the emergency coordinator are to:

- Initiate evacuation, if needed.
- Initiate emergency response agency notification.
- Insure that response activities are commensurate with the level of the emergency and as discussed in this plan are implemented.
- Interface and coordinate with outside agencies responding to on-site emergencies.

12.2 COMMUNICATIONS

Personnel shall maintain verbal communication with each other. The following communications systems will be available during site activities:

- Cellular telephone or access to a land phone for emergency purposes.
- Hand held radios, as needed.
- Compressed air horn (signals emergency evacuation only) at the site.
- Hand signals, if used, will be diagrammed and posted.
- Posted location of evacuation assembly area(s).
- Posted route to the nearest hospital for the project site.
- Posted emergency phone numbers.

12.3 ACCIDENT/INCIDENT REPORT

After the emergency event is over or during the course of the emergency when possible, the SHSS will notify the PESM by telephone. Should an accident or incident occur, the Project Superintendent or PjM and the SHSS will immediately investigate the cause, notify the PESM, and promptly complete the following:

- ***FWENC Incident Report Form.*** Details of the incident shall be documented within 24 hours and copies of the report forwarded to the DoN RPM and the PESM. Reports of serious incidents will also be faxed to the PM by the Project Superintendent or PjM.
- ***Incident Investigation Report.*** The Incident Investigation Report will have the same distribution as the Incident Report Form within 3 days of the incident.

Any recommended additional hazard control measures must be discussed with the Project Superintendent, the SHSS, and the PESM and meet their approval, prior to implementation. Any occupational injuries and illnesses will be recorded, if applicable, on an OSHA Form No. 200. The SHSS shall report immediately by telephone or telegraph to the nearest District Office of the Division of Occupational Safety and Health (Cal-OSHA) any serious injury or illness, or death, of an employee occurring in a place of employment or in connection with any employment. Immediately means as soon as practically possible but not longer than 8 hours. Records of all site accidents and first aid treatments will be maintained by the SHSS.

12.4 PRE-EMERGENCY PLANNING

Prior to performing any work the Project Superintendent or PjM and the SHSS will verify all emergency action plans by insuring that planned support facilities are available and that emergency contact numbers are valid. As work proceeds the SHSS will continue to insure that plans specified in this section can be implemented at all times. Furthermore, the SHSS will constantly insure that plans are modified as necessary to accommodate changes. The SHSS will coordinate all changes with the PESM. Upon arrival at the site, the Project Superintendent will ensure that all personnel know the system for communication of emergency situations and how to use a radio or nearby phone to summon emergency assistance. A vehicle must be available to transport personnel to safe locations or to hospitals. All personnel on this project will know how to use a portable fire extinguisher. All personnel will know the location of all emergency equipment and supplies.

12.5 EMERGENCY MEDICAL TREATMENT

The following procedures should be observed if an accident with injury occurs:

12.5.1 First Aid

Only qualified personnel shall provide first aid and stabilize an individual needing assistance. Life support techniques such as CPR and treatment of life threatening problems such as airway obstruction and shock will be given top priority. At least two persons certified in First Aid techniques and CPR will be on each work site at all times; FWENC EHS Procedure 4-1, Bloodborne Pathogens, will be followed when first aid/CPR are administered. The SHSS will be current in First Aid and CPR. Professional medical assistance shall be obtained at the earliest possible opportunity. The nearest hospital to Alameda Point is shown on a map that is part of every SHSP. A general map to the nearest medical facility is attached to this plan (Figure 2).

12.5.2 Minor Injury

- Contact Task Foreman or "buddy."
- Have qualified first aid personnel treat injury.
- Record injury and include name of injured person, nature of injury, and treatment given.

12.5.3 Medical Emergency

In the event of a medical emergency when actual or suspected serious injury occurs, the following procedures shall be implemented:

- Survey scene and evaluate whether the area is safe for entry.
- Remove the exposed or injured person(s) from immediate danger.
- Render first aid if necessary. Decontaminate affected personnel after critical first aid is given.
- Obtain paramedic services or ambulance transport to local hospital. This procedure shall be followed even if there is no visible injury.
- Call 911 from phones on Alameda Point. If cell phones are used, 911 will contact the California Highway Patrol who will connect the call to the nearest responding agency.
- Identify location by number of nearest building, request medical assistance, provide name and telephone number.
- Request assistance from emergency medical service and/or additional assistance.
- Other personnel in the work area shall be evacuated to a safe distance until the Project Superintendent determines that it is safe for work to resume. If there is any doubt regarding the condition of the area, work shall not commence until all hazard control issues are resolved.
- Notify Navy Technical Representative (NTR) of incident and fill out accident reporting forms and associated documents.

12.5.4 Fatal Injury

If a fatal injury occurs, the following additional steps will be followed:

- Notify the Project Superintendent immediately.
- Notify PESM who will initiate contact with Cal-OSHA and other appropriate agencies.
- Notify NTR.
- All work activities on the project must be stopped on the project for 24 hours.
- Assist Cal-OSHA as directed.

12.6 DECONTAMINATION DURING MEDICAL EMERGENCIES

Any personnel requiring emergency medical attention shall be evacuated immediately from exclusion and contamination-reduction zones. Personnel shall not enter the area to attempt a rescue if their own lives would be threatened. The decision whether or not to decontaminate a victim prior to evacuation is based on the type and severity of the illness or injury and the nature of the contaminant.

For some emergency victims, immediate decontamination may be an essential part of life saving first aid. For others, decontamination may aggravate the injury or delay life saving treatment. If decontamination does not interfere with essential treatment, it should be performed.

If decontamination can be performed:

- Wash external clothing and cut it away.
- Wrap victim in clean blanket or towel if necessary.

If decontamination cannot be performed:

- Wrap the victim in blankets or plastic to reduce contamination of other personnel.
- Alert emergency and off-site medical personnel to potential contamination; instruct them about specific decontamination procedures.
- Send along site personnel familiar with the incident.

12.7 EMERGENCY SITE EVACUATION PROCEDURES

In the event of an emergency situation such as fire or explosion, the SHSS or a supervisor will activate an air horn for approximately 15 seconds indicating the initiation of evacuation procedures. All personnel in both the restricted and non-restricted areas will evacuate and assemble near the support zone or other safe area as identified by the SHSS. Prior to start of work at any project site the SHSS will identify and mark the location of an evacuation assembly area for that project site. The location should be upwind of the site as determined by the wind

direction. For efficient and safe site evacuation and assessment of the emergency situation, the Project Superintendent or SHSS will have authority to initiate proper action if outside services are required. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The SHSS must ensure that access for emergency equipment is provided and that all equipment that may cause combustion has been shut down once the alarm has been sounded. As soon as possible, and while the safety of all personnel is confirmed emergency agency notification will commence. The SHSS will brief site personnel each day as to the location of the evacuation assembly area.

Prior to the start of each project work site the SHSS will establish safe egress routes from the site to the evacuation assembly area. The SHSS will prepare a drawing or map that diagrams these safe egress routes. The SHSS will use this same map to diagram egress from the evacuation assembly area to the facility gate to be used as an exit. From this point, the map showing the route to the nearest clinic and the nearest hospital will be used if medical services are required.

12.8 FIRE PREVENTION AND PROTECTION

Fire prevention and protection measures require pre-planning. At least one 20-pound dry chemical ABC fire extinguisher will be located at each project site. A mounted fire extinguisher is required in every vehicle including heavy equipment. Employees will follow safe work practices to include proper storage of flammable and combustible liquids. Smoking is permitted only in those areas designated specifically by the project manager, Project Superintendent or SHSS. Personnel will follow hot work procedures to insure that work is performed in a safe environment. In the event of a fire or explosion, summon the Fire Department immediately, take a head count and implement evacuation procedures.

12.9 SPILL CONTROL AND RESPONSE

All spills, leaks, and fires involving oil or hazardous substances at Alameda Point must be reported to the RPM and the PESM. The person reporting the leak, spill, etc. is required to provide the following information:

- His/her name
- Location of spill and facility number, if known
- Number of injured personnel and nature of injuries, if known
- Substance spilled
- Amount spilled (estimate)
- Extent of spill
- Rate that substance is currently being released (estimate)
- Time spill occurred (estimate)

- Any other pertinent information

The RPM in coordination with the PjM will manage notifications to regulatory agencies. In addition, all spills will be reported to the FWENC Regional Environmental Safety and Quality (ESQ) Manager. Project personnel will not report spills directly to any agency unless specifically requested by the RPM or Contracting Officer.

A minor spill would involve no immediate threat to human health or the environment, minimal property damage, and does not exceed the reportable quantity (RQ) for that material. In the event of a minor spill, the appropriate response action is for the responsible person to notify the RPM and the PjM and supply the responders with as much information as possible. In the case of a spill of contaminated or hazardous materials, the following procedures shall be followed:

- Notify the Project Superintendent
- Identify protective clothing or equipment required to respond
- Contain the spill
- Neutralize and/or solidify any product
- Transfer material into 55-gallon drums
- Document incident

12.9.1 Release Prevention and Minimization Measures

In addition to training, the following procedures will be implemented to prevent and minimize releases of hazardous materials:

- Do not conduct hazardous materials operation when the weather could cause significant risk to surrounding area if a spill should occur.
- Transfer all materials in or over a bermed or "protected" area. A protected area is one that is covered with an impermeable material, such as polyethylene.
- Dike temporary storage tanks containing hazardous wastes or potentially hazardous wastes to contain potential releases.
- Maintain a supply of basic spill response materials and protective equipment on site to include:
 - Absorbent sheets, pillows, booms or absorbent material
 - Open top 55-gallon drums or other containers with lids
 - Booms, shovels, and other tools, such as squeegees

12.10 SIGNIFICANT VAPOR RELEASE

Any project activity which releases significant amounts of vapor must be reported immediately as described in the spill release procedure. Every attempt to mitigate the release must be taken if

it can be safely performed. For example, during excavations vapor releases may be controlled by simply replacing cover on the excavation. Down-wind evacuation procedures may be required. These will be initiated through coordination with facility emergency coordinators.

12.11 EARTHQUAKE RESPONSE

If an earthquake should occur during the course of site activities, take the following steps:

- Stop working. Remain calm and do not panic.
- Do not use or do anything that might be a source of ignition (i.e., smoking, cutting, or welding).
- Avoid power lines, power poles, and windows.
- If in a vehicle, stay in the vehicle until the earthquake is over.
- If in a building, take cover under a heavy piece of furniture.

After the earthquake is over:

- Prepare for after shocks. Stay out of severely damaged buildings.
- Meet for a head count at a location designated by the Project Superintendent.
- Check for injuries. Do not move seriously injured personnel unless remaining where they are would create danger of further injury.
- Check vehicles, equipment, and buildings for any obvious damage.
- Check utility lines for damage. Switch off power, water and gas until a utility official has inspected the buildings and operational area and determined it is safe.
- If driving, watch carefully for hazards created by the earthquake (i.e., undermined roads, weak bridges, or overpasses, etc.).

12.12 EMERGENCY EQUIPMENT

The following emergency equipment will be brought onto the site or will be stationed near each work area:

- Fire extinguisher, minimum one 20-pound dry chemical ABC type in the CRC at the edge of exclusion zone.
- Industrial first aid kit, in the CRC, at the edge of the support zone.
- Portable eye wash, capable of supplying 15 minutes of water and protected from direct sunlight in the support area, at the edge of the support zone.
- Air horn at the support area, at the edge of the support zone.
- Spill control material consisting of either absorbent pillows or absorbent material and shovels, in the support zone by the CRC entrance.

The following equipment will be available at the support trailer for use in an emergency situation:

- Industrial first aid kit
- Blanket

Each SHSP may specify additional emergency equipment consistent with the hazards associated with the DO. For example, some projects may require that SCBAs be available for work on projects where exposure to contaminants may require their use.

12.13 POSTINGS

Emergency contact names and phone numbers will be posted at every project site. A map showing egress routes, evacuation assembly areas, and the route to the clinic and the hospital will also be posted. At some remote locations, posting may not be practical. In this case, the contact names, phone numbers and maps will be placed on the dashboard of every vehicle. These postings and maps are prepared for each SHSP.

13.0 TRAINING

In accordance with FWENC corporate policy and pursuant to 29 CFR, Part 1910.120 (8 CCR, Section 5192), hazardous waste site workers shall, at the time of job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations unless excepted by the above reference. As a minimum, the training shall have consisted of instruction in the topics outlined in the above reference. Personnel who have not met the requirements for initial training shall not be allowed to work in any site activities that may expose them to chemical or physical hazards.

An employee's prior experience and/or training for equivalency may be considered to meet the training described above. The PESM will make the determination if previous experience and/or training meet the initial training requirements.

In addition to the required initial training, each employee shall have received 3 days of directly supervised on-the-job training at a hazardous waste site. This training shall have addressed the duties the employees are expected to perform and be properly documented. The FWENC Project Superintendent has the responsibility for ensuring that personnel assigned to field sites comply with these requirements. The Project Superintendent will provide the Navy Contracting Officer or designee with written certification of completion of the required training and maintain copies of required training records at the work site.

13.1 MANAGER/SUPERVISOR TRAINING

In accordance with 29 CFR, Part 1910.120 (8 CCR, Section 5192), on-site managers and supervisors directly responsible for, or who supervise employees engaged in hazardous waste operations, shall receive training as required above and at least 8 additional hours of specialized training on managing such operations by the time of job assignment.

13.2 ANNUAL 8-HOUR REFRESHER TRAINING

Annual 8-hour refresher training will be required of all hazardous waste site field personnel to maintain their qualifications for fieldwork. The following topics will be reviewed: toxicology, respiratory protection—including air purifying devices and SCBA—medical surveillance, decontamination procedures, and personal protective clothing. In addition, topics deemed necessary by the SHSS or PESM may be added to the above list.

13.3 SITE-SPECIFIC TRAINING

Prior to commencement of field activities, the SHSS will provide site-specific training to all personnel assigned to the site; this training will specifically address the activities, procedures, monitoring, and equipment for the site operations. Training will include site and facility layout, hazards, and emergency services at the site, hazard communication, and will highlight all provisions contained within the SHSP. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and health for their particular activity. Additional training, if required for completion of field tasks during the site work, will be identified and provided for personnel as the work progresses.

13.4 ON-SITE SAFETY BRIEFINGS

Project personnel and visitors will be given daily on-site health and safety briefings by the SHSS, or designee, to assist site personnel in safely conducting their work activities. This training will be conducted prior to the start of new work activities using AHAs. The briefings will include information on new operations to be conducted, changes in work practices, or changes in the site's environmental conditions. The briefings will also provide a forum to facilitate conformance with safety requirements, and identify performance deficiencies related to safety during daily activities or as a result of safety inspections.

13.5 FIRST AID AND CPR

The SHSS will identify those individuals requiring first aid and CPR training. At a minimum, the SHSS will have received first aid and CPR training. At least two persons trained and current in certification of first aid and CPR will be present at every work site. The training will be consistent with the requirements of the American Red Cross Association.

14.0 LOGS, REPORTS, AND RECORDKEEPING

The following is a summary of required health and safety logs, reports, and recordkeeping for this contract.

14.1 SITE HEALTH AND SAFETY PLAN CHANGE APPROVAL FORM

A Site Health and Safety Plan Change Approval Form is to be completed for all changes to the SHSP. This form requires the signatures of the PjM or Project Superintendent, the SHSS, and the PESM. The PESM sends a copy of this form to the DoN CIH within five workdays for review. Substantial changes to the SHSP may require a Field Change Request according to the Quality Control (QC) Plan in order to initiate a significant change to the SHSP. PESM approval of each Field Change Request (FCR) is required. Copies of the FCR affecting the SHSP are also sent to the DoN CIH.

14.2 MEDICAL AND TRAINING RECORDS

Full medical and training records are normally kept by the employer. Proof of the most recent training and medical qualification must be provided to the SHSS by the employee. The SHSS will keep a file containing appropriate training and medical qualifications for site workers. Medical records will be maintained in accordance with 29 CFR, Part 1910.20 (8 CCR, Section 3204). The examining physician retains custody of the complete medical record. Employee records have only the physician statement of medical qualification for duty and the employee's fitness to wear a respirator.

14.3 ON-SITE LOG

A log of personnel onsite each day (including job title, level of protection, and work location) will be kept by the SHSS or designee. Originals will be kept in the DO project file.

14.4 EXPOSURE RECORDS

Any personal monitoring results, laboratory reports, calculations, and air sampling data sheets are part of an employee exposure record. These records will be kept in accordance with 29 CFR, Part 1910.20 (8 CCR, Section 3204). For FWENC employees, the originals will be sent to the records coordinator. For subcontractor employees, the originals will be sent to the subcontractor employer and a copy kept in the DO project file.

14.5 ACCIDENT/INCIDENT REPORTS

A FWENC accident/incident report must be completed following any event involving emergency first aid, lost time, or property damage. The originals will be sent to the FWENC records coordinator for maintenance and distribution by FWENC. Copies will be distributed to the

PESM, Project Superintendent, subcontractor employees, if appropriate, and the Navy Contracting Officer. A copy of the completed forms will be kept in the DO project file.

14.6 OSHA FORM 200

An OSHA Form 200 (Log of Occupational Injuries and Illnesses) will be kept at the project site. All recordable injuries or illnesses will be recorded on this form. At the end of the project, the original will be sent to the FWENC records coordinator for maintenance. Subcontractor employers must also meet the requirements of maintaining an OSHA 200 form. The FWENC accident/incident report meets the requirements of the OSHA Form 101 (Supplemental Record) and must be maintained with the OSHA Form 200 for all recordable injuries or illnesses.

14.7 HEALTH AND SAFETY FIELD LOG BOOKS

The SHSS will complete and maintain the daily log book at the site. Log books will be used to document important events as they occur. Some general procedures will pertain to the use of all log books. The following information will be recorded on each page of all log books:

- Initials of persons making entry
- Date
- Time of each entry (military time)
- Location

The log will be signed at the end of each day or work shift. All entries will be made in black ink. No pages will be removed from the log book and each page will be numbered. Any corrections will be made with a single line through the entry, and initialed.

The log book will be used to record daily site conditions and activities within the exclusion zones. The log book will contain the following items:

- Names and job titles of all personnel in the work group
- Level of protection
- Health and safety monitoring equipment used
- Weather conditions
- Work/rest schedule (if appropriate)
- A description of the activities as they are occurring
- Any pertinent health and safety observations
- Sample number (if appropriate)

Copies of the log books will be submitted to the Project Superintendent as necessary. The original log books will become part of the exposure records file and will be maintained by the FWENC records coordinator.

14.8 MATERIAL SAFETY DATA SHEETS

MSDS will be obtained and kept on file at the project site for each hazardous chemical brought to, used, or stored at the site. An MSDS for each contaminant will also be maintained. The MSDS will be kept on file by the SHSS at the project site.

14.9 CLOSEOUT SAFETY REPORT

A final safety report will be provided to the PESM summarizing the safety performance achieved during the site work. Specific elements of the report will include the following:

- A description of significant events, exposures, accidents, illnesses, and actions taken to prevent their occurrence.
- A summary of monitoring results including air, noise, radiation, and heat stress samples.
- A description of any state or federal inspections involving the health and safety of site workers.

15.0 FIELD PERSONNEL REVIEW

All personnel are required to be trained in this Base-Wide Plan and the SHSP. Upon completion of this training and review, all project personnel will acknowledge this training by signing a SHSP review form.

16.0 REFERENCES

Note:

Specific references unique to a project will either be listed as an attachment to the SHSP or they will be incorporated as a separate section to the SHSP. For example, a specific procedure for personal air sampling may be included as a reference within the SHSP.

FIGURES

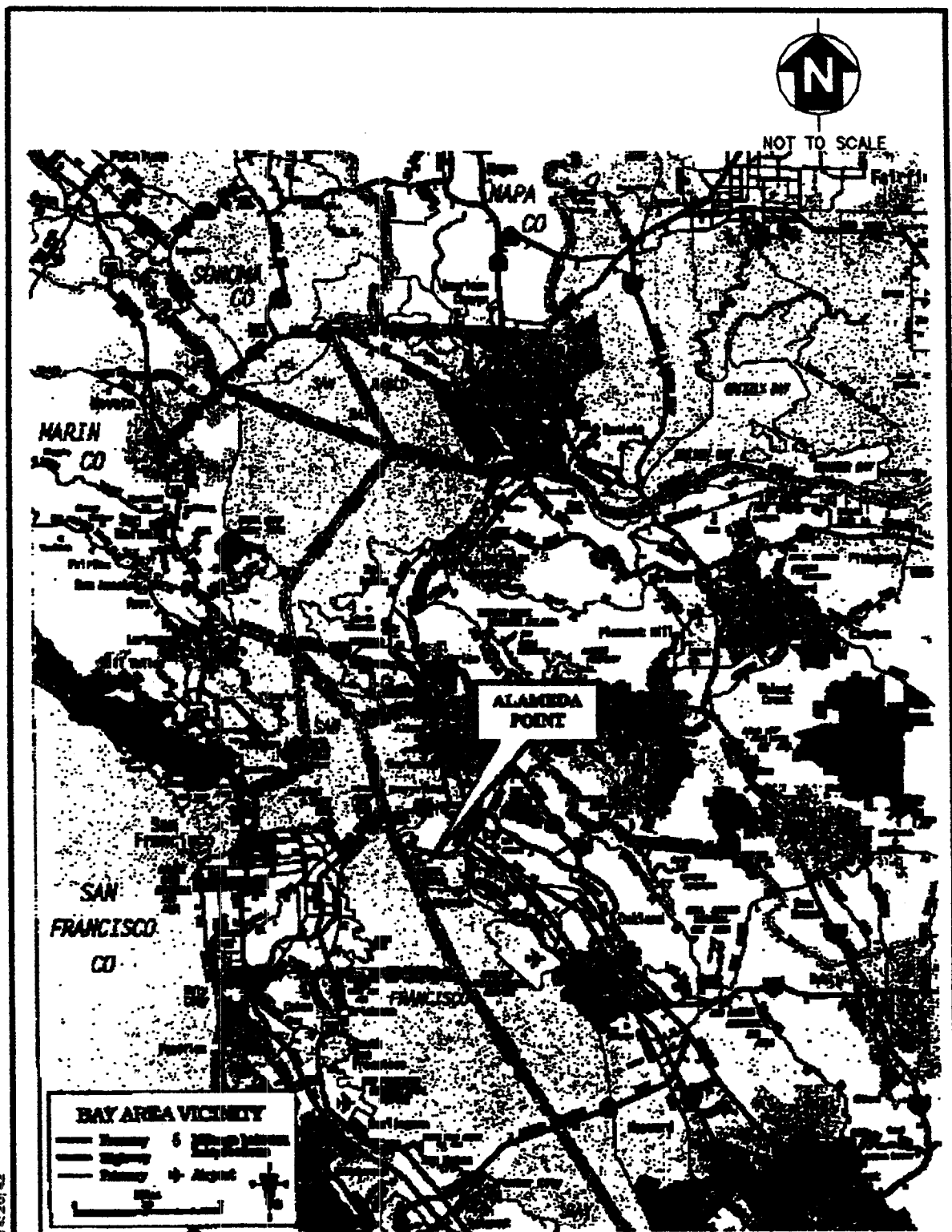
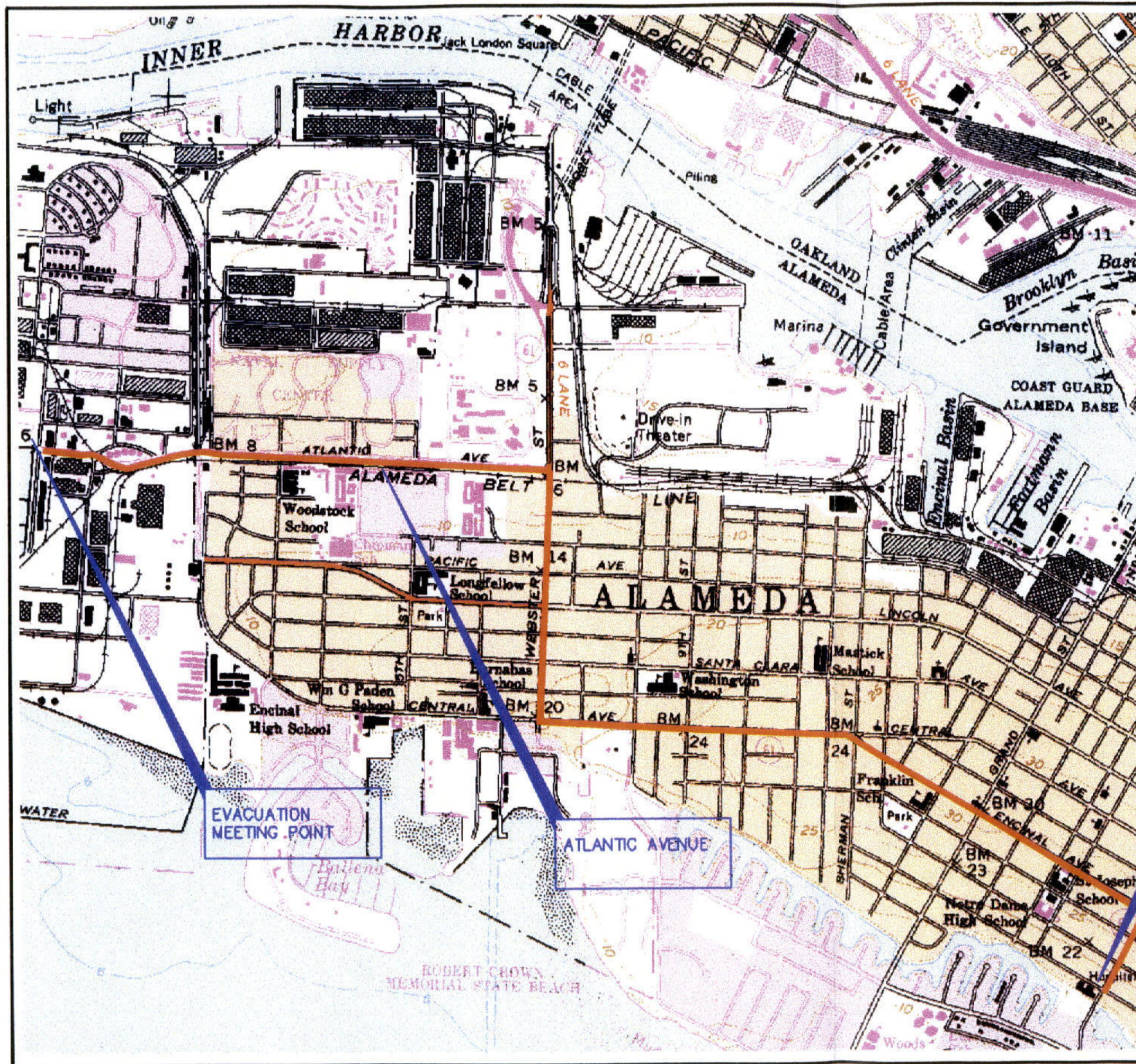


Figure 1
ALAMEDA POINT(NAS ALAMEDA)
VICINITY MAP

ALAMEDA, CALIFORNIA

FOSTER  WHEELER
ENVIRONMENTAL CORPORATION



HOSPITAL DIRECTIONS:

TAKE ATLANTIC AVENUE TO WEBSTER STREET AND TURN RIGHT. FOLLOW WEBSTER TO CENTRAL AVENUE AND TURN LEFT. FOLLOW CENTRAL UNTIL IT SPLITS AND TAKE THE RIGHT FORK THAT IS ENCINAL AVENUE. FOLLOW ENCINAL TO WILLOW STREET AND TURN RIGHT. TAKE WILLOW TO CLINTON STREET AND THE HOSPITAL IS LOCATED ON THE CORNER.



ALAMEDA HOSPITAL
2070 CLINTON AVENUE
ALAMEDA, CA 94501
(510) 522-3700

Figure 2
ROUTE TO HOSPITAL

Fleet and Industrial Supply Center Oakland
Alameda Facility/Alameda Annex

FOSTER  WHEELER
ENVIRONMENTAL CORPORATION

APPENDIX D
AIR MONITORING PLAN

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-98-D-5713
CTO No. 0040

APPENDIX D
FINAL
AIR MONITORING PLAN
Revision 0
November 26, 2001

CERCLA TIME-CRITICAL REMOVAL ACTION AT
INSTALLATION RESTORATION SITE 25
ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RAC-02-0206



FOSTER WHEELER ENVIRONMENTAL CORPORATION

1230 Columbia Street, Suite 640
San Diego, CA 92101

Lida Moussavian
Principal Air Quality Engineer

Abram Eloskof, M.Sc., M. Eng., CIH
Project Manager

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Attachment 1 Alameda Monitoring Station, Wind Rose Plot

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Figure D.2-1 Site Vicinity Map

ABBREVIATIONS AND ACRONYMS

AMP	Air Monitoring Plan
BAAQMD	Bay Area Air Quality Management District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
DON	U.S. Department of the DON
EPA	U.S. Environmental Protection Agency
IR	Installation Restoration
mph	miles per hour
NAS	Naval Air Station
PAH	polynuclear aromatic hydrocarbon
PM ₁₀	particulate matter less than 10 microns
QC	quality control
TCRA	time-critical removal action
TSP	total suspended particulates

1.0 INTRODUCTION

The following Air Monitoring Plan (AMP) presents information regarding the air monitoring program to be conducted at Operable Unit-5 [Installation Restoration (IR) Site 25] Alameda Point, Alameda, California. The project at IR Site 25 is located on the east side of the San Francisco Bay. The program will be conducted to ensure that air emission control measures utilized on site are effective and to monitor the air quality concentrations of the pollutants resulting from the proposed removal project.

The proposed time-critical removal action (TCRA) at IR Site 25 located at former Naval Air Station (NAS) Alameda Point, Alameda, California, will be conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The project area is located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). However, as a CERCLA site, the project is not subject to the air quality permitting requirements of the BAAQMD. The regulatory oversight and guidance will be provided by the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency, Department of Toxic Substances Control, and the California Regional Water Quality Control Board.

This removal project will involve the excavation, stockpiling, loading, off-site treatment and/or disposal of polynuclear aromatic hydrocarbon (PAH)-contaminated soil. The excavated area will then be backfilled and compacted with appropriate import soils approved by the U.S. Department of the Navy (DON).

An ambient air monitoring station will be established at the site to perform real-time monitoring of wind speed, direction, barometric pressure, and temperature during excavation and earthmoving activities. Air samples will be collected at the monitoring stations and will be analyzed for the airborne contaminants of concern. The results of the air quality sampling will be used to determine if there are any air quality compliance concerns or if modifications to the removal activities are needed. The meteorological data for the general project area, in particular wind speed and direction, will be used to decide on the proper locations of the air monitoring stations.

This AMP has been prepared to ensure that activities associated with the air sampling program at the facility are performed using EPA document 40 Code of Federal Regulation (CFR) 53 for particulate matter less than 10 microns (PM₁₀) and total suspended particulates (TSP), and Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, EPA Method TO-13 for PAHs.

The purpose of this plan is to provide information regarding:

- A list of target analytes

- The air quality monitoring system
- The meteorological monitoring system
- Operation and maintenance procedures
- Quality assurance/quality control (QC) procedures to be instituted by the air quality program
- Procedures for documentation of activities and data reporting

2.0 SITE DESCRIPTION

2.1 AREA DESCRIPTION

The project is located on Alameda Island on the east side of the San Francisco Bay Area. The work area defined as a TCRA area and is within the 42-acre IR Site 25 area located in the northeastern corner of Alameda Point (Figure D.2-1). The TCRA area includes approximately 14 acres of the site and consists of multiple-unit structures and open space park areas. Of the 14 acres at the site, 10 acres are open space, covered with vegetation and soil, and 4 acres are occupied by structures and cement or asphalt paving.

2.2 CLIMATE DESCRIPTION – NORTHERN ALAMEDA REGION

The TCRA area is located in the Northern Alameda Region as defined by the BBAQMD. Its western boundary is defined by the San Francisco Bay and its eastern boundary by the Oakland-Berkeley Hills. The Oakland-Berkeley Hills are a significant barrier to air flow having an approximate ridge line height of 1,500 feet.

In this area, marine air intrusion through the Golden Gate, across San Francisco, and through the San Bruno Gap is a dominant weather factor throughout the year. The Oakland-Berkeley Hills cause a bifurcation of westerly flow in the vicinity of Oakland, with southerly winds observed over the San Francisco Bay north of the Golden Gate and northwesterly winds over the bay to the south of the Golden Gate. The divergent wind field results in diminished speed on the east side of the bay, with a higher frequency of near calm conditions than areas west of this split flow. Temperatures have a narrow range due to the proximity of the moderating marine air. Maximum temperatures in the summer average in the upper 60s to low 70s, with minimums in the mid 50s. Winter highs are in the mid to high 50s and winter lows are in the low to mid 40s. Precipitation totals generally increase from south to north and from the lowlands to the Oakland-Berkeley Hills' ridge line.

Alameda Point is located on the west end of Alameda Island, approximately 2 miles southeast of the Bay Bridge. By virtue of its closeness to the Golden Gate, it is representative of the moist marine zone of the northern Alameda/western Contra Costa climate region. The prevailing wind direction is westerly with a 57 percent frequency for wind within the northwest-southwest sector. The average speed for this sector is 9 miles per hour (mph) and ranges from 7 to 10 mph. Winds less than 5 mph occur 30 percent of the time. Maximum temperatures in the summer average only in the upper 60s, with minimum in the mid 50s. Winter highs are in the mid 50s and winter lows in the mid 40s. Sunshine is somewhat scarce at Alameda Point compared to more inland stations. Precipitation averages about 20 inches a year.

2.3 MONITORING SITE LOCATIONS

Air monitoring stations will be installed at the site to collect air samples downwind of the construction activity area. The air monitoring is performed to estimate and assess the impact of the on-site activities. The monitoring stations will preferably be located near the school. The exact locations of the monitoring stations will be determined based on the wind direction, the availability of power, and may be modified as needed. Collection of data will start prior to the site activities in order to estimate general baseline values for the background concentrations.

To establish the tentative locations of the air monitoring stations, the available records from the nearest weather station at Alameda have been evaluated. A copy of the Wind Rose data for the NAS Alameda Monitoring Station is included in Attachment 1 of this AMP. According to the plot, the predominant wind direction during the construction activity period is toward the east.

3.0 AIR MONITORING PROGRAM

Previous investigations have included a preliminary assessment of the nature and extent of contaminated soil at the TCRA area. The air monitoring program will include TSP, PM₁₀, and PAHs.

Prior to field activities, PM₁₀, TSP, and PAHs will be sampled for a duration of 1 week to establish baseline results. PM₁₀, TSP, and PAHs will be sampled on a daily basis throughout the duration of excavation and contaminated soil handling activities.

3.1 AIR QUALITY MONITORING SYSTEM

Air monitoring stations will be equipped with high-volume and medium-volume air samplers. The high-volume air sampler will be used for collection of samples for determination of weight and specifications (particulates), and the medium-volume air sampler will be used for the collection of samples for PAH analysis. Descriptions of these samplers are provided below.

3.1.1 High-Volume Air Sampler

The equipment shall conform to the requirements of 40 CFR 50. A high-volume air sampler, General Metal Works PS-1, or approved equivalent shall be used. The equipment needs to comply with the specifications provided in the regulations for the sampler, filter, accuracy, calibration, and quality assurances.

The flow of the high-volume air sampler must be calibrated to establish traceability of the field measurement. Calibrations shall follow the guidelines of Section 9.3, 40 CFR 50 and Section 2.6 of the EPA *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods* (EPA, 1998).

After collecting the samples, the appropriate field data will be entered in the field logs, including date, time, sample identification, calibration data and sample location, ambient temperature and pressure, and any additional information that could influence interpretation of the results.

3.1.2 Medium-Volume Air Sampler

The medium-volume air samplers are designed to include a particulate inlet filter cassette with appropriate adsorption media, a flow controller, and a sample pump. The sample air will be drawn through the filter cassette and adsorption media. The filter cassette, consisting of a Whatman quartz particulate filter, will collect PAHs that may be in the solid phase or are adhering to particulate matter. The adsorption media downstream of the particulate filter will collect PAHs that may be in the vapor phase. The adsorption media will include a XAD[®] adsorption resin sandwiched between two polyurethane foam adsorption plugs. A rotameter and a

metering valve will be used for indicating sampler flow rate and flow control, respectively. The air sampling will be controlled by a timer for automatic startup and shutdown of the sampler after 8 hours of sampling.

3.2 METEOROLOGICAL MONITORING SYSTEM

This section describes the components of the meteorological monitoring program that include determining the wind speed, wind direction, barometric pressure, and temperature. The meteorological monitoring procedures and equipment specifications will be consistent with the regulatory agency guidelines as outlined in Appendix C of Ambient Air Quality Monitoring Methodology, 40 CFR 58.

3.2.1 Meteorological Tower

The meteorological monitoring instrumentation will be mounted on a 10-foot tower at a location that will allow adequate atmospheric exposure. The tower location will be selected to ensure that representative measurements of meteorological conditions for the entire site will be obtained. The wind speed and wind direction system will be a battery-powered system mounted on the tower. The system will operate continuously during removal activities.

3.2.2 Meteorological System

Wind speed will be measured using a photo-cell, chopper-type wind sensor with a three-cup rotating anemometer assembly, or equivalent. In this type of sensor, the rotating sensor shaft turns a photo-cell chopper assembly. The frequency of the interrupted light pulse is output by the transmitter in the form of a variable-frequency square wave that is proportional to the wind speed.

Wind direction will be measured using a potentiometer-type sensor wind vane, or equivalent. In this type of sensor, the vane motion is coupled to a low-torque potentiometer by a high-precision shaft and bearing assembly. The potentiometer's output is proportional to the position of the wind vane and, hence, wind direction.

Both the wind speed and wind direction sensors will be mounted on a cross-arm. The cross-arm, with attached sensors, will be mounted at the top of the 10-foot tower. The wind speed and direction sensor components will share a common signal conditioner. The specified monitoring range for wind speed and wind direction will be approximately 0 to 100 mph and from 0 to 540 degrees, respectively.

4.0 OPERATION AND MAINTENANCE

This section describes the anticipated operational and maintenance activities associated with the air quality sampling and meteorological monitoring systems. Once all systems have been installed, each component will be calibrated following procedures approved by the regulatory guidelines (EPA 40 CFR Part 58, Appendix B, Quality Assurance Requirements for Prevention of Significant Deterioration Requirements). Upon completion of system calibration, the monitoring systems will be officially placed online. Copies of all instrument certifications and filed calibration results will be maintained in the field office trailer.

4.1 AIR MONITORING PERSONNEL

A qualified on-site field technician with proper training will conduct the routine field operations. The training will be provided by a representative of the equipment manufacturer, supplier, or the contractor and will include routine maintenance and calibration procedures. All of the field technician's activities will be documented in appropriate operating logs and maintenance forms. The technician will routinely report the status of field operations to the Project Superintendent.

Activities conducted by the home office personnel will include management and administration, coordination of laboratory standards, program logistical support, supplies procurement, and data validation, analysis, and reporting activities. In addition, qualified personnel will provide non-routine maintenance assistance on an as-needed basis.

4.2 ROUTINE OPERATIONS AND MAINTENANCE

Routine operations, calibration, and maintenance procedures will be established as part of an overall QC Plan intended to minimize the potential for instrument downtime or collection of distorted data. The field technician will perform the routine equipment inspections in accordance with these procedures. Routine communications on field activities will be conducted with and may be periodically supplemented by inspection by the Project Superintendent. Equipment inspection at the beginning and end of every sampling sequence will be conducted as part of the scheduled preventative maintenance. During the inspections, the response of the on-site instrumentation will be compared to primary standards.

Upon visiting each monitoring station, the technician will follow a prescribed list of activities to check the status of each equipment item. The results of all checks will be documented on special check sheets and in on-site logbooks. There will be duplicate copies of each type of form. One set will always remain with the technicians in the field office while the originals will accompany the data and will be filed at the home office for review by the Air Quality Engineer. Whenever the monitoring station is visited, the technician will note any phenomena or unusual activity that could have an effect on measured pollutant levels.

4.3 PREVENTATIVE MAINTENANCE

In addition to the routine checks and inspections performed during each monitoring station visit, a field preventative maintenance program will be conducted on the monitoring system components. For the air quality components, this will include the inspection of all system electrical components, timing devices, calibration devices and standards, and data acquisition devices. For the meteorological monitoring equipment, this will include a series of sensor and electronic calibration checks, field inspections, and calibration of all system components.

4.4 NON-ROUTINE MAINTENANCE AND EMERGENCY RESPONSE

Routine operations, preventative maintenance, and QC procedures are intended to minimize the potential for monitoring system component failures. Non-routine maintenance provisions, on the other hand, are intended to minimize the downtime or loss of data that may result from any unscheduled outages. It should be noted that the equipment specified for this program would be selected in part based on its reliability and minimum potential for failure.

The on-site technician, supported by the home office, will initially attempt to diagnose and correct a problem with the existing components and perform the repairs on site. Major repairs that require professional service will be given top priority so systems can be returned to service and spare parts restocked as quickly as possible.

5.0 QUALITY CONTROL

This section discusses the activities associated with the QC program for the air monitoring system. The basic purpose of the QC program is to ensure that the monitoring instrumentation and support equipment are operating within specifications at all times. Furthermore, the QC program will ensure that a complete, valid, and defensible database is developed.

5.1 QUALITY CONTROL PROCEDURES

The QC program will be implemented to ensure that collected data is accurate and precise in order to effectively characterize both the magnitude and variations in ambient conditions at the monitoring stations. Complete documentation of the results of routine operations and QC aspects of the program, including all log notes, calibration forms, and certifications, will be maintained on file and will be delivered to the DON at completion of the project. Key elements of the routine field QC program will include:

- Routine visits to each sampling station over the sampling period to check sampler pump flow rates, verify operation and sample conditions, and note any ambient conditions that could affect the accuracy or representativeness of the sample
- Collection of periodic field blank samples to assess the efficiency of the data collection process
- Calibration of the sampling pumps and flow devices at the beginning and end of every sampling sequence or other specific schedule
- Routine preventative maintenance of all equipment components

The analytical laboratory performing the sample analyses will establish a QC program that will also ensure the accuracy of the data as it is being analyzed. Key elements of the routine QC procedures implemented during the sample analyses will include analysis of laboratory blanks and spikes and calibration of the analytical instruments as specified in the appropriate methodology (EPA 40 CFR Part 53 for PM₁₀ and TSP, and Compendium of Methods for the Determination of Toxic Organic Compounds in ambient Air, EPA Method TO-13 for PAHs).

In addition to the field and laboratory QC activities, the data will be subject to a series of data consistency and miscellaneous checks during the final data processing phase. This will include the review of all component performances, daily data sheets, operating logs, calibration records, laboratory documentation, and the results of chemical analysis.

An operations logbook will be initiated at the onset of the sampling program and will be maintained throughout the program. This log will allow for a narrative description of all activities and conditions as these events affect the collected data and will include the following information:

- Sample numerical identification
- Sample date
- Sample site
- Construction activity occurring on the day of sampling
- Sample start and stop times
- Sample flow at the beginning and end and any sample checks taken during the sampling period
- Total sample time
- Total sample flow
- Submittal date of the sample to the laboratory
- Sample concentration based on the laboratory results, if available
- Signature of the technician responsible for the sample and completing the sheet

For meteorological monitoring the following information will be documented during each sampling sequence:

- Observation date
- Observation site
- Construction activity occurring on the day of sampling
- Time of the instrument inspection
- Observed reading during the inspection
- Results of any calibration checks
- Observations of ambient conditions and the sampled environment
- Signature of the technician responsible for acquiring the data

An additional element of the overall QC program will be the documentation of certificates of calibration for all calibration and test equipment during field activities. This requirement will also extend to any vendor factory calibration checks.

6.0 DATA EVALUATION AND REPORTING

This section describes the reduction, processing, validation, and reporting of all data.

6.1 DATA ASSEMBLY AND REVIEW

All field materials, including field notes and operating logs, calibration forms, filters, and laboratory results will be periodically assembled and reviewed. The purpose of the review is to check for completeness and to assess the validity of collected data on the basis of monitoring performance. Field records and log sheet entries of calibration results will also be reviewed and verified, and final calculated data values will be entered into the data file. At this time, any data known to be missing or erroneous will be edited out of the data file.

6.2 DATA PROCESSING AND VALIDATION

Ultimately, a computerized listing of all final data values for the site will be prepared in a specially tailored format listing hourly and daily values for all parameters, if available. This final output listing will include summaries of data recovery rates, 8-hour and weekly or monthly average values for each parameter, and date of occurrence of peak measured values. A summary will be printed for each week and month. The summaries will be used to conduct final checks of the data. Side by side listings of values of all parameters are intended to facilitate data consistency checks of measured values. Summary statistics should also reflect general trends or patterns in air quality observed under different meteorological conditions. Prior to final approval of the database file, the Project Manager will review results of all field, office, and laboratory QC activities, and corrections and modifications to the file will be made as appropriate.

6.3 FINAL REPORT

At the conclusion of the monitoring period, a final report will be prepared to summarize all collected data. A series of graphic and tabular data analyses and summaries will be prepared. The final report will summarize the project and equipment specifications, as well as the procedures and the data generated by the air monitoring activities.

7.0 REFERENCES

U.S. Environmental Protection Agency (EPA). 1998. *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods*.

FIGURE

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02020611.DWG

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CTO: #0040

APPROVED BY: AE

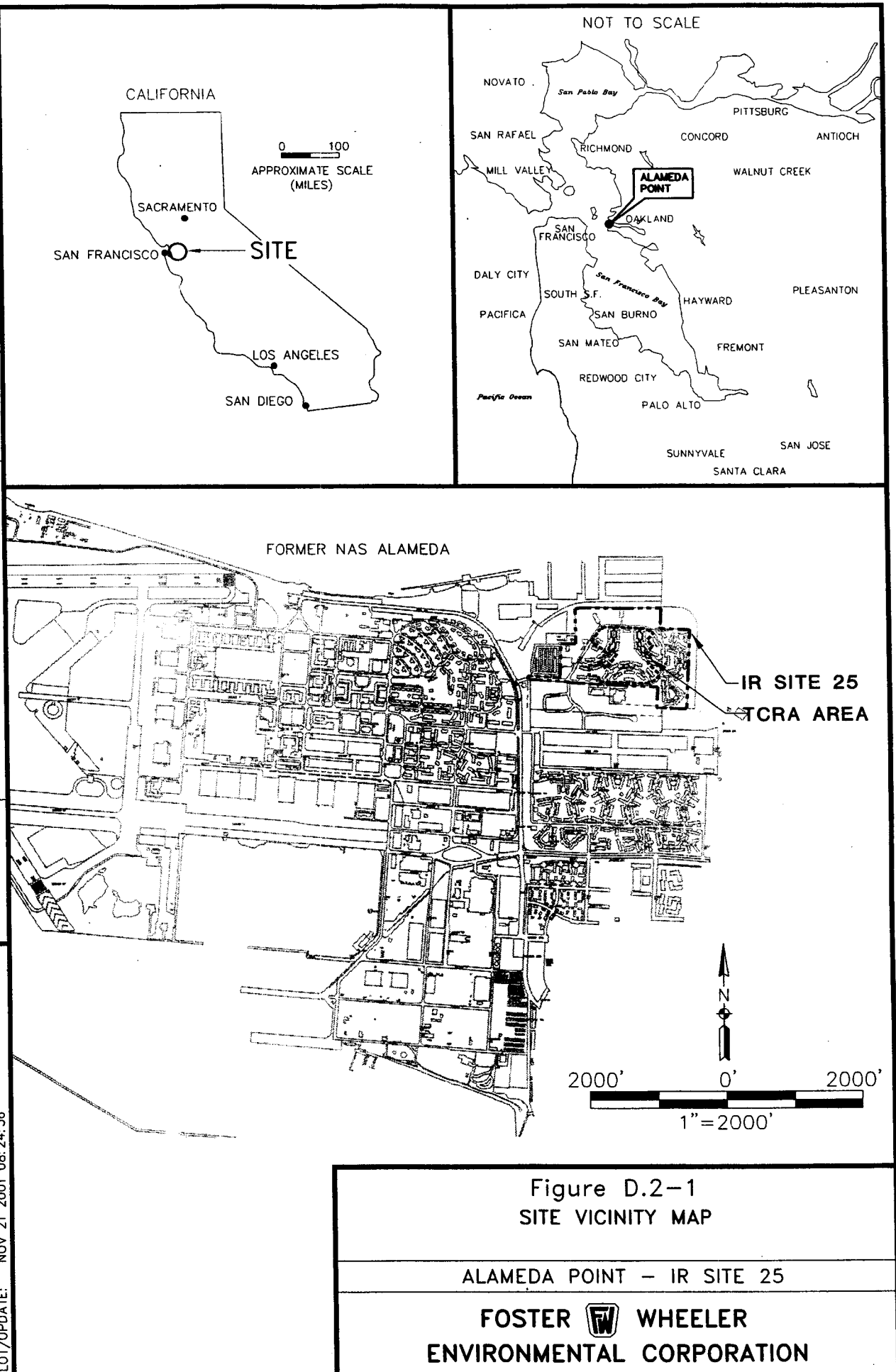
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DRAWN BY: MD

REVISION: 0

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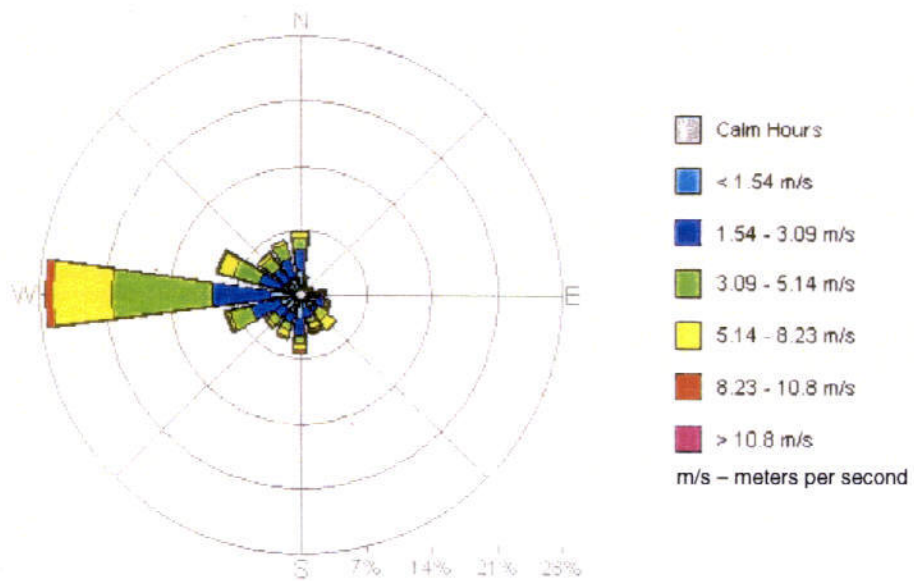
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ATTACHMENT 1
ALAMEDA MONITORING STATION
WIND ROSE PLOT

ATTACHMENT 1

NAS ALAMEDA MONITORING STATION
WIND ROSE PLOT



APPENDIX E

PROJECT CONTRACTOR QUALITY CONTROL PLAN

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, CA 92132-5187

CONTRACT No. N68711-98-D-5713
CTO No. 0040

APPENDIX E

FINAL

PROJECT CONTRACTOR QUALITY CONTROL PLAN

Revision 0

November 26, 2001

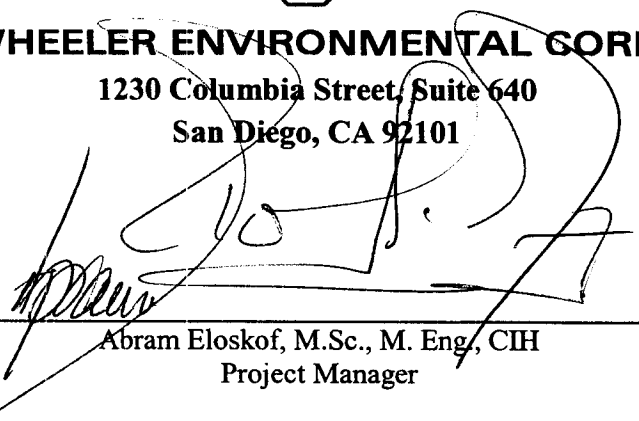
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ALAMEDA, CALIFORNIA

DCN: FWSD-RAC-02-0206

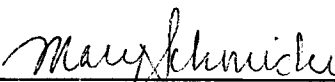


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Table E.5-1 Definable Features of Work

LIST OF FIGURES

Figure E.2-1 Project Organization Chart

[illegible]

ABBREVIATIONS AND ACRONYMS

BRAC	Base Realignment and Closure
CAD	computer-assisted drafting
CCS	California State Plane Coordinate System
CQCR	Contractor Quality Control Report
CTO	Contract Task Order
DCN	Design Change Notice
DERA	Defense Environmental Restoration Account
DFW	Definable Feature of Work
DON	Department of the Navy
EPA	U.S. Environmental Protection Agency
ER,N	Environmental Restoration, Navy
FCR	Field Change Request
FWENC	Foster Wheeler Environmental Corporation
GIS	Geographic Information System
IR	Installation Restoration
MSDS	Material Safety Data Sheet
NAD	North American Datum
NCR	Nonconformance Report
NFGS	Naval Facilities Engineering Command Guide Specification
PjM	Project Manager
PPE	personal protective equipment
PCQC	Project Contractor Quality Control
PQCM	Project Quality Control Manager
QA	quality assurance
QC	quality control
QCM	Quality Control Program Manager
RAC	Remedial Action Contract
RAWP	Removal Action Work Plan
RFI	Request for Information
ROICC	Resident Officer in Charge of Construction
RPM	Remedial Project Manager

ABBREVIATIONS AND ACRONYMS

(Continued)

SD	submittal description
SDS	Spatial Data Standard
SHSP	Site-Specific Health and Safety Plan
SHSS	Site Health and Safety Specialist
SWDIV	Southwest Division Naval Facilities Engineering Command
TCRA	time-critical removal action
USC	United States Code

1.0 INTRODUCTION

This Project Contractor Quality Control (PCQC) Plan was prepared by Foster Wheeler Environmental Corporation (FWENC) to support work activities for the Department of the Navy's (DON's) time-critical removal action (TCRA) Operable Unit-5 [synonymous with at Installation Restoration (IR) Site 25], Alameda Point, Alameda, California. This TCRA was undertaken pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act and the National Oil and Hazardous Substances Pollution Contingency Plan, 42 United States Code (USC), Section 9604, 10 USC, Section 2701, and Federal Executive Order 12580. The Plan was prepared on behalf of the DON, Southwest Division Naval Facilities Engineering Command (SWDIV) under Remedial Action Contract (RAC) No. N68711-98-D-5713, Contract Task Order (CTO) No. 0040.

This PCQC Plan is an addendum to the *Final Contractor Quality Control Program Plan* (FWENC, 1999).

This PCQC Plan details definable features of work (DFWs) and provides a testing plan and log, a submittal register, and appropriate specifications for each task at IR Site 25.

The PCQC Plan establishes the procedures and methods that will be implemented for various field activities to be performed by FWENC including all work performed by subcontractors.

The Program and PCQC Plan will help ensure:

- Engineered systems are designed, constructed, and operated according to defined requirements and expectations.
- All items of work performed are in compliance with the provisions of the contract and each individual CTO.
- Environmental data are of the appropriate type and quality needed for their intended use.

This PCQC Plan complies with the requirements of the following documents:

- *Naval Facilities Engineering Command Guide Specification* (NFGS), Section 1450 (SWDIV, 2000)
- NFGS, Section 1330 (SWDIV, 2000).

This PCQC Plan will be available in the project field office.

2.0 ORGANIZATION AND RESPONSIBILITIES

This section describes the organization and authority for project personnel including subcontractors. The organizational structure, functional responsibilities, personnel qualifications, levels of authority, and lines of communication established within the organization to ensure high quality work are documented. The project organization chart showing the reporting lines for each individual is provided in Figure E.2-1, Project Organization Chart.

All personnel assigned to this project will be qualified and experienced. The responsibilities and authorities of the key project personnel are described in the following paragraphs.

2.1 CONTRACT TASK ORDER MANAGER

The Project Manager (PjM), Abram Eloskof, is responsible for the direction, execution, and successful completion of project tasks in order to achieve overall project goals. The PjM has responsibility for, and the authority to, perform the following quality-affecting activities related to the project:

- Coordinate work activities of subcontractors and FWENC personnel and ensure all personnel adhere to the administrative and technical requirements of the project.
- Monitor and report the progress of work and ensure project deliverables are completed on time and within project budget.
- Ensure adherence to the quality requirements of the contract, project scope of work, and the PCQC Plan.
- Ensure that all contract work will meet the requirements of the specifications and applicable codes.
- Ensure that all work activities are conducted in a safe manner in accordance with the Site-Specific Health and Safety Plan (SHSP), *U.S. Army Corps of Engineers Safety and Health Manual* (U.S. Army Corps of Engineers, 1996), and all applicable Occupational Safety and Health Administration regulations.
- Serve as the primary contact between DON personnel and FWENC for actions and information related to the work.
- Coordinate satisfactory resolution and completion of evaluation and acceptance for Nonconformance Reports (NCRs).

2.2 QUALITY CONTROL PROGRAM MANAGER

The Quality Control Program Manager (QCM), Mary Schneider, is responsible for the oversight of program quality control (QC) including chemical data acquisition. The duties of the QCM include:

- Establish and maintain the quality program for the RAC.
- Work directly with the Program Manager, Neil Hart, and the DON to ensure implementation of the Program QC Plan.
- Be the focal point for coordination of quality matters across all projects and resolving quality concerns.
- Provide quality directions and training to Project Quality Control Manager (PQCM), and others performing quality functions.
- Suspend project activities if quality standards are not maintained.
- Interface with the DON including SWDIV Quality Assurance (QA) Officer on quality-related items.
- Implement the DON technical directives relating to quality.

2.3 PROJECT SUPERINTENDENT

The Project Superintendent, Jim Baldwin, reports to the PjM and is responsible for coordinating, directing, implementing, and supervising site-specific activities. Specific duties of the Project Superintendent include:

- Implement site-specific activities in accordance with the Removal Action Work Plan (RAWP).
- Direct field leaders, support personnel, and subcontractors.
- Administer site access.
- Maintain work site, vehicles, and equipment.
- Coordinate and maintain logistics of all components of on-site tasks, including all personnel and equipment.
- Prepare daily production status reports and estimating future scheduling needs and monthly summary reports.
- Coordinate, prepare, and complete all required field reports to the Resident Officer in Charge of Construction (ROICC).
- Ensure that all safety requirements are met, enforced, and documented.
- Ensure compliance with applicable regulations, including contractual requirements and health and safety requirements.
- Maintain the current 2-week look-ahead schedule of field activities.

- Recommend changes to improve project efficiency and effectiveness.
- Verify field personnel are trained and qualified to complete assigned tasks.
- Attend QC meetings.
- Coordinate work efforts with the PQCM and Site Health and Safety Specialist (SHSS).
- Provide technical justification for change orders.
- Maintain site security.

2.4 PROJECT QUALITY CONTROL MANAGER

The PQCM, Craig Rice, is responsible for overall management of project QC and reports to the QCM. The PQCM will be on site at all times during construction. The PQCM has the authority to stop work on site-related issues affecting the quality of the work performed and for directing the correction of all nonconforming work.

In the event of his absence, Tajma Vaughns-Rachal, will serve as his replacement. The requirements for the alternate will be the same as for the designated PQCM. The PQCM and alternate PQCM's resumes and appointment letters are included as Attachment 1.

The duties of the PQCM, as they apply to this project, include:

- Provide and maintain an effective QC system for all site activities.
- Monitor QC activities to ensure conformance with authorized policies, procedures, contract specifications, required standards, sound practices, and methods of quality construction.
- Maintain sufficient staff to perform all QC activities to ensure QC for all work phases, work shifts, and work crews.
- Prepare the daily Contractor Quality Control Reports (CQCRs).
- Perform and coordinate the three phases of inspection (Preparatory, Initial, and Follow-up) and make sure they are implemented for all DFWs.
- Responsible for issuance and enforcement of NCR.
- Ensure that all on-site and off-site inspections, testing, and sampling are performed in accordance with the plans, specifications, and applicable codes.
- Ensure all required tests and inspections are performed and results documented.
- Conduct required QC meetings, including the coordination and mutual understanding meeting, site survey visit, and other scheduled meetings.
- Provide inspection and conduct or supervise testing and sampling.
- Coordinate and maintain submittal register, photograph log sheet, request for information (RFI), and NCR log.

- Review and maintain records of approved submittals, design change notices (DCNs) for construction activities, and Field Change Requests (FCRs).
- Inspect material delivery handling and storage in accordance with technical specifications.
- Update as-built field drawings for invoice certification.
- Review and approve submittals and shop drawings and/or forward submittals as information only for approval.
- Maintain testing and rework logs.
- Issue compliance notice on material, equipment, work-in-place, and workmanship.
- Issue and maintain NCR.
- Review project plans and procedures for quality issues.
- Identify the need for corrective action, initiating, and recommending and coordinating solutions for project quality problems.
- Perform submittal reviews and approvals/certifications.
- Direct the removal of work, material, and equipment that is not in compliance with plans and specifications.
- Recommend removal of any individual from the project that consistently fails to perform their duties properly.
- Immediately stop any segment of work that does not comply with the specifications and drawings.

2.5 PROJECT ENGINEER

The Project Engineer is responsible for implementing, directing, and supervising engineering activities on site. The Project Engineer will notify the PjM of any design changes. Field engineering will include conducting survey control, inspection and testing, and implementation of the project technical specifications and contract drawings. The duties of the Project Engineer include:

- Ensuring all engineering work activities are performed in accordance with the FWENC corporate engineering procedures, technical specifications, contract drawings, RAWP, and applicable professional standards.
- Providing oversight of engineering work activities performed by subcontractors.
- Implementing engineering design requirements.
- Conducting field engineering inspections and tests required by the project technical specifications and contract drawings.
- Ensuring the quality of survey control data.

- Inspecting the work performed each day for compliance with the RAWP and technical specifications.
- Preparing engineering documents in accordance with the technical specifications and drawings.
- Issuing and maintaining FCRs and DCNs.

2.6 SITE HEALTH AND SAFETY SPECIALIST

The SHSS ensures that all elements of the approved SHSP are implemented and enforced on site. The SHSS reports directly to the Program Health and Safety Officer, Roger Margotto, and will assist in implementing and enforcing the SHSP in the field. The SHSS has full authority to issue stop work orders or evacuation orders where work operations or noncompliance(s) may threaten the health and safety of site workers or the public.

Duties and responsibilities for the SHSS include the following:

- Ensure enforcement of the SHSP through daily site inspections.
- Coordinate site health and safety requirements with the Project Superintendent and PjM.
- Ensure maintenance of all health and safety monitoring and personal protective equipment (PPE) and direct site monitoring activities.
- Report all health and safety monitoring results to the Program Health and Safety Officer.
- Coordinate daily field activities with the Project Superintendent.
- Coordinate site safety and emergency response duties; verify site communications system with site personnel.
- Implement periodic safety equipment and supplies.
- Perform inspection of safety equipment.
- Coordinate with the Program Health and Safety Officer and ROICC.
- Maintain recordkeeping and reporting systems.
- Initiate necessary revisions or changes to the SHSP.
- Maintain site control procedures.
- Maintain current certification for first aid and cardiopulmonary resuscitation.

2.7 SUBCONTRACTORS AND VENDORS

Qualified subcontractors will be procured to provide services for this project. Subcontractors and vendors will comply with the requirements of the contract specifications, drawings, site PCQC

Plan, and applicable codes and regulations. The subcontractors are responsible for field inspection of their operating activities. The PQCM ensures that this is accomplished.

Subcontractor personnel are responsible for maintaining a daily log of the project activities they perform and for providing information needed to complete the daily CQCR for the PQCM. All inspection records, including inspection reports, deficiency reports, and reinspections of corrective actions will be documented by the PQCM.

3.0 SUBMITTALS

This section describes the review and approval process of submittals. In addition, the PQCM will institute and maintain a submittal register to track submittals from issue to approval. A list of required submittals for each task will be developed and included in the site PCQC Plan and revised as necessary. A copy of the submittal register is included in Attachment 2, along with other PCQC forms. The submittal register will be kept current by FWENC at the job site. Updated copies of the submittal register will be provided to the government.

Submittals will be scheduled, reviewed, certified, and managed in accordance with the latest edition of the NFGS-01330E submittals.

Required submittals may consist of the following types:

- **Shop Drawings.** Drawings, schedules, diagrams, and other data prepared specifically for this contract, by contractor or through contractor by way of subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate portion of work.
- **Product Data.** Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate portion of work, but not prepared exclusively for this contract.
- **Sample.** Physical examples of products, materials, equipment, assemblies, or workmanship that are physically identical to portions of work, illustrating portion of work or establishing standards for evaluating appearance of finished work or both.
- **Administrative Submittals.** Data presented for reviews and approval to ensure that administrative requirements of projects are adequately met, but not to ensure directly that work is in accordance with design concept and in compliance with contract documents.

3.1 SUBMITTAL DESCRIPTIONS

Submittal descriptions (SD) are as follows:

- SD-01 Pre-Construction Submittals
 - Certificates of insurance
 - Surety bonds
 - List of proposed subcontractors
 - List of proposed products
 - Construction progress schedule
 - Submittal schedule

- Schedule of values
- Health and safety plan
- RAWP
- QC plan
- Environmental protection plan
- **SD-02 Shop Drawings**
 - Drawings, diagrams, and schedules specifically prepared to illustrate some portion of the work.
 - Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the contractor for integrating the product or system into the project.
 - Drawings prepared by or for the contractor to show how multiple systems and interdisciplinary work will be coordinated.
- **SD-03 Product Data**
 - Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.
 - Samples of warranty language when the contract required extended product warranties.
- **SD-04 Samples**
 - Physical examples of materials, equipment, or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.
 - Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.
 - Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies that are to be incorporated into the project and those which will be removed at conclusion of the work.
- **SD-05 Design Data**
 - Calculations, mix designs, analyses, or other data pertaining to a part of work.
- **SD-06 Test Reports**
 - Report, signed by authorized official of testing laboratory, that a material, product, or system identical to the material, product, or system to be provided has been tested in accordance with specified requirements (testing must have been within 3 years of date of contract award for the project).

- Report, which includes findings of a test, required to be performed by the contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.
- Report, which includes finding of a test made at the job site or on sample taken from the job site, or on a portion of work during or after installation.
- Investigation reports.
- Daily checklists.
- Final acceptance test and operational test procedure.
- **SD-07 Certificates**
 - Statements signed by responsible officials of manufacturer of product, system, or material attesting that product, system, or material meets specification requirements. Must be dated after award of project contract and clearly name the project.
 - Document required of contractor, or of a supplier, installer, or subcontractor through contractor, the purpose of which is to further the quality of an orderly progression of a portion of the work by documenting procedures, acceptability of methods, or personnel qualifications.
 - Confined space entry permits.
- **SD-08 Manufacturer's Instructions**
 - Preprinted material describing installation of a product, system, or material, including special notices and Material Safety Data Sheets (MSDSs) concerning impedances, hazards, and safety precautions.
- **SD-09 Manufacturer's Field Reports**
 - Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with the manufacturer's standards or instructions.
- **SD-10 Operation and Maintenance Data**
 - Data intended to be incorporated into operations and maintenance manuals.
- **SD-11 Closeout Submittals**
 - Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.
 - As-built drawings.
 - Special warranties.
 - Posted operating instructions.
 - Training plan.

3.2 SUBMITTAL REQUIREMENTS

Submittal requirements will be in accordance with the RAWP. The following requirements apply to all submittals:

- Each submittal will be complete and sufficient in detail to allow determination of compliance with the plans, specifications, and applicable codes.
- Each submittal will be reviewed by the PQCM or an approved reviewer.
- A Catalog Cut/Shop Drawing Transmittal and Approval form (Attachment 2) certifying compliance with all contract requirements will accompany each submittal in accordance with the technical specifications.
- Proposed deviations from the contract requirements will be clearly identified.
- Submittals will include items such as applicable drawings, descriptive literature, test reports, samples, certifications, and warranties.
- All spatial data, including computer-assisted drafting (CAD) drawings, will conform to the Tri-Service Spatial Data Standard (SDS) and be submitted as DOS AutoCAD version 13 or Microstation version 5.0, or a later, compatible format.
- Geographic Information System (GIS) data will conform to the Tri-Service SDS, and be submitted as ARCInfo Export Format or MGE Export format.
- The site survey will be conducted utilizing the California State Plane Coordinate System (CCS), North American Datum (NAD) 27, Lambert Zone 3; however, the Subcontractor must also convert the data to the CCS, NAD 83, Lambert Zone 3. The conversion is required for FWENC's submittal to DON.
- The vertical reference elevation is mean sea level, with the relevant control data provided.

3.3 REVIEW OF SUBMITTALS

Submittals will be reviewed to ensure completeness, accuracy, and contract compliance. All items will be approved by the PQCM. Any submittals requiring modifications or changes will be returned to the originating organization for correction and then resubmitted for review and approval by the PQCM prior to acceptance. Approval by the PQCM of the submittal will be indicated by stamping, signing, or initialing, in addition to dating the Transmittal and Approval form (Attachment 2). The PQCM, or designee, will perform a check to ensure that all materials and equipment have been tested, submitted, and approved during the preparatory phase of the QC inspections. Site activities will not be performed prior to the required approval of applicable submittals.

3.4 SUBMITTAL PROCESS

The PQCM will provide all submittals to the ROICC and to the required DON personnel. Each submittal will have a unique document control number. All possible attempts will be made to

schedule submittals to allow for approval time noted in the contract and project scope of work. However, in rare instances, certain submittals may require accelerated processing by the DON to maintain the site activities schedule.

The PQCM will update the submittal register regularly. A transmittal and approval form (Attachment 2) will accompany each submittal. Each transmittal and submittal, except sample panel and sample installation, will be identified with the following information permanently adhered to or noted on each separate component:

- Project title and location
- Contract number and CTO number
- Name, address, and phone number of subcontractor, supplier, manufacturer, and any other second tier contractor associated with submittal
- Date of submittal
- SD number of each component of submittal
- Product identification and location in project
- Description of item being submitted, including reference to specification section and SD number
- Approval of submitting organization indicating conformance to the requirements
- Submittals reviewed by the PQCM or an approved reviewer (the submittal will indicate that it either conforms to contract requirements or does not conform to contract requirements)

The format of each submittal type is described in the following sections.

3.4.1 Format of Product Data

Product data submittal will be formatted as follows:

- Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page, and catalog item numbers for product data.
- Indicate, by prominent notation, each product that is being submitted; indicate specification section number and paragraph number to which it pertains.
- Supplement product data with material prepared for project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for project.

3.4.2 Format for Shop Drawings

Shop drawings will be formatted as follows:

- Shop drawings shall not be less than 8½ by 11 inches, nor more than 30 by 42 inches.
- Present 8½ by 11-inch-sized shop drawings as part of the bound volume for submittals required by section. Present larger drawings in sets.
- Include on each drawing the drawing title, number, date, and revision numbers and dates in addition to information stated in Section 3.4.
- Dimension drawings, except diagrams and schematic drawings, prepare drawings demonstrating interface with other trades to scale. Identify materials and products for work shown.

3.4.3 Format of Samples

Samples will be formatted as follows:

- Furnish samples in sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately same size as specified:
 - Sample of equipment or device: full size
 - Sample of materials less than 2 by 3 inches: built up to 8½ by 11 inches
 - Sample of materials exceeding 8½ by 11 inches: cut down to 8½ by 11 inches and adequate to indicate color, texture, and material variations
 - Sample of linear devices or materials: 10-inch length or length to be supplied, if less than 10 inches; examples of linear devices or materials are conduit and handrails
 - Sample of non-solid materials paint: examples of non-solid materials are sand and paint
 - Color selection samples: 2 by 4 inches
 - Sample panel: 4 by 4 feet
 - Sample installation: 100 square feet
- Samples showing range of variation: where variations are unavoidable due to nature of the materials, submit sets of samples no less than 3 units showing extremes and middle of range.
- Reusable samples: incorporate returned samples into work only if so specified or indicated. Incorporated samples shall be in undamaged condition at time of use.
- Recording of sample installation: note and preserve the notation of area constituting sample installation, but remove notation at final cleanup of project.
- When color, texture, or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style for comparison.

3.4.4 Format of Administrative Submittals

Administrative submittals will be formatted as follows:

- When a submittal includes a document that is to be used in a project or becomes part of project record other than as a submittal, do not apply contractor's approval stamp to document, but to a separate sheet accompanying document.

3.5 REVIEW AND PROCESSING OF SUBMITTALS THAT DO NOT REQUIRE DON APPROVAL

Submittals will be reviewed by the PQCM or an approved reviewer. The submittal will indicate that it either conforms to contract requirements or does not conform to contract requirements. The PQCM will advise submitter of the results of the review. The submittal log will be updated to indicate status.

Conforming submittals will be certified by the PCQM for approval and forwarded to the required DON personnel as an information only submittal.

Nonconforming submittals will be returned to the submitter for correction, resolution of comments, and resubmittal.

3.6 REVIEW AND PROCESSING OF SUBMITTALS THAT REQUIRE DON APPROVAL

Submittals will be reviewed by the PQCM or an approved reviewer. The submittal will indicate that it either conforms to contract requirements or does not conform to contract requirements. Reviewed and certified submittals will be forwarded to the contracting officer utilizing the transmittal and approval form (Attachment 2). Each form will indicate item transmitted, the date and signature of PQCM and submittal reviewer (when applicable), and the QC-certifying statement. The QC-certifying statement is as follows:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number N68711-98-D-5713, is in compliance with the contract drawings and specifications, can be installed in the allocated spaces, and is submitted for Government approval."

Upon completion of review, the ROICC (or ROICC's Representative) may return the transmittal sheet to the PQCM for further action.

The PQCM will advise submitter of the results of the review in writing and include any comments. The submittal log will be updated to indicate status.

Nonconforming submittals may be returned to the submitter for correction, resolution of comments, and resubmittal, if required. Work will not begin until submittals for that work have been returned as “Approved” or “Approved as Noted”.

3.7 REVISED SUBMITTALS

Resubmission of submittals will be logged, reviewed, and processed in a manner identical with the initial submittal. When resubmitting disapproved transmittals or transmittals noted for resubmittal, a copy of the previously submitted transmittal, including all reviewer comments for use by approving authority, will be provided.

The submittal number used for the original submittal will be used for each resubmittal followed by a sequential alpha suffix to indicate resubmission.

4.0 TESTING

The PQCM will ensure the performance of all tests specified or required by the project specifications and drawings to verify that control measures are adequate to provide a product conforming to contract specifications. General requirements for testing procedures to be implemented for each task will be included in the project specifications and drawings and in the RAWP. The type, number, and frequency of required tests will be specified in the Testing Plan and Log for each task. A Testing Plan and Log form is included in Attachment 2.

The PQCM is responsible for conducting or coordinating the required and timely tests. For all testing activities, the PQCM will verify and document that:

- Testing procedures comply with contract requirements.
- Facilities and testing equipment are available and comply with testing standards.
- Instrument calibration data checks against certified standards, and certification is current.
- Recording forms and the test identification control number system have been prepared.

4.1 DOCUMENTATION

All test results, both passing and failing, will be recorded on the Daily CQCR for the day the results are obtained. Specification paragraph referencing, location where tests were taken, and the sequential control number identifying the test will be given. The actual test reports may be submitted later to the ROICC. An information copy of tests performed by off-site facilities will be provided directly to the PjM or designee.

4.2 LABORATORY SERVICES

An independent testing laboratory will provide laboratory services as needed. The laboratory will be selected and qualified in accordance with applicable project requirements and accredited/certified as described below. Name of the laboratory and proof of accreditation will be submitted after procurement has been completed and prior to the start of field activities.

4.2.1 Accreditation for Non-Environmental Projects

Acceptable accreditation programs for non-environmental projects are the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program, the American Association of State Highway and Transportation Officials Program, and the American Association for Laboratory Accreditation Program.

A copy of the certificate of accreditation, scope of accreditation, and latest directory of the accrediting organization for accredited laboratories will be submitted to the Contracting Officer or designated representative. The scope of the laboratory's accreditation shall include the test methods required by the project. Any deviation from the above requirements must be approved in writing by the ROICC.

4.2.2 Accreditation for Environmental Projects

Laboratories performing Installation Restoration Program work funded by Environmental Restoration, Navy (ER,N) [formerly Defense Environmental Restoration Account (DERA)] or Base Realignment and Closure (BRAC) (ER,N eligible in the absence of BRAC funding) must successfully complete the DON Laboratory Evaluation Program. Unless otherwise specified, sampling and analysis shall be performed using current U. S. Environmental Protection Agency (EPA) procedures and QC. Any deviation from the above requirements must be approved in writing by the SWDIV QA Officer.

On-site chemical analysis by mobile laboratories must be performed by laboratories certified by the California Department of Health Services through the Environmental Laboratory Accreditation Program.

5.0 INSPECTION PLAN

The site PCQC Plans are the means by which FWENC ensures that all field activities, including that of subcontractors and suppliers, comply with the requirements of the contract. A DFW is defined as an activity or task which is separate and distinct from other activities and which requires separate control activities. In general, each work discipline or specification division would be considered a DFW. In addition, sub-activities or tasks within a work discipline or specification division could be considered a DFW if determined that separate and distinct control requirements exist for these activities or tasks.

The DFW establishes the measures required to verify both the quality of work performed and compliance with specified requirements and include inspecting materials and workmanship before, during, and after each DFW. The DFW for each task is included as Table E.5-1.

The controls defined will be adequately covered in a coordination and mutual understanding meeting. The meeting will address all site operations and implement the following three control phases for all aspects of the work specified in the site PCQC Plan:

- Preparatory Phase
- Initial Phase
- Follow-up Phase

Attachment 2 contains inspection checklist forms for each phase.

5.1 COORDINATION AND MUTUAL UNDERSTANDING MEETING

Prior to the start of site work, a Coordination and Mutual Understanding meeting with the ROICC will be held to discuss the QC program required by this contract. The purpose of this meeting is to develop a mutual understanding of the QC details, including forms to be used, administration of on-site and off-site work, coordination of the Contractor's management, production, and the PQCM duties with the ROICC. As a minimum, the Contractor's personnel required to attend will include the PjM, Project Superintendent, and PQCM. Minutes of the meeting will be prepared by the PQCM and signed by both the contractor and the contracting officer. This meeting may be held in conjunction with other meetings (that is, pre-construction meeting).

5.2 QC MEETINGS

After the start of field activities, the PQCM will conduct QC meetings once every week or as required by the ROICC. The meetings will be held at the project site, and will be attended by the Project Superintendent. The PQCM will notify the ROICC at least 48 hours in advance of each meeting. One copy of the QC meeting minutes will be sent to all attendees within 2 calendar days of the meeting. The following will be accomplished at each meeting:

- Review the minutes of the previous meeting.
- Review the schedule and the status of work.
 - Work, inspection, or testing accomplished since last meeting
 - Rework items identified since last meeting
 - Rework items completed since last meeting
- Review the status of submittals.
 - Submittals reviewed and approved since last meeting
 - Submittals required in the near future
- Review the work to be accomplished in the next 2 weeks and documentation required. Schedule the three phases of control and testing.
 - Establish completion date for rework items
 - Preparatory phases required
 - Initial phases required
 - Follow-up phases required
 - Testing required
 - Status of off-site work or testing
 - Documentation required
 - Discuss upcoming activity hazard analysis
- Resolve QC and production problems.
- Address items that may require revisions to the PCQC Plan.
 - Changes in QC organization personnel
 - Changes in procedures

5.3 PREPARATORY PHASE INSPECTION

The PQCM will conduct preparatory phase inspections prior to starting the DFW. These inspections will include:

- A review of each paragraph of applicable specifications

- A review of the contract plans, drawings, and requirements
- A check to ensure that all materials and/or equipment have been tested, submitted, and approved
- A check to ensure that provisions have been made to provide required control inspection and testing
- A check to ensure that all construction methods have been agreed upon
- An examination of the work area to ensure that all required preliminary work has been completed and is in compliance with the contract
- A physical examination of required materials, equipment, and sample work to ensure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored
- A review of the appropriate activity hazard analysis to ensure safety requirements are met and the required MSDS are defined
- A discussion of procedures for constructing the work, including repetitive deficiencies
- Documentation of construction tolerance and workmanship standards for that phase of work
- A check to ensure that the portion of the site PCQC Plan for the work to be performed has been accepted by the DON

The PjM, DON Remedial Project Manager (RPM), and ROICC will be notified at least two workdays in advance of preparatory phase activity. This phase will include a meeting that will be attended by the PQCM, Project Superintendent, SHSS and other responsible personnel (as applicable).

The preparatory phase meetings will be documented and will be reported on the CQCR (Attachment 2) with the Preparatory Phase Checklist (Attachment 2) included as an attachment. The PQCM will advise the Project Superintendent who will direct personnel performing work activities as to the acceptable level of workmanship required.

5.4 INITIAL PHASE INSPECTION

An initial inspection will be performed at the beginning of a DFW and will include:

- A check of preliminary work to ensure that it is in compliance with contract requirements
- A review of the inspection checklist documenting results of the preparatory meeting
- Verification of full contract compliance, including required control inspection, and that testing is performed

- Establishment of the required level of workmanship and verification to ensure work meets acceptable quality standards
- Resolution of all differences
- A check of safety requirements to ensure compliance with and upgrading of the SHSP and activity hazard analyses
- A review of the activity hazard analysis with project personnel

The PjM and the DON RPM and ROICC will be notified at least 2 workdays in advance of any initial phase activity. The PQCM will document initial inspections for each item using the Initial Phase Checklist (Attachment 2) and attach it to the CQCR. The exact location of the initial phase inspection will be indicated for future reference and comparison with follow-up inspections.

An initial phase inspection will be conducted each time a new crew arrives on site or any time acceptable specified quality standards are not being met. No DFW can begin until the preparatory and initial phases have been concluded.

5.5 ADDITIONAL PREPARATORY AND INITIAL PHASES

The PQCM may conduct additional preparatory and initial inspections on the same DFW under the following circumstances: (1) if the quality of ongoing work is unacceptable, (2) if there are changes in the staff, on-site supervision, or work crew, (3) if work on a definable feature is resumed after a substantial period of inactivity, or (4) if other problems develop.

5.6 FOLLOW-UP PHASE INSPECTION

During the completion of a particular work feature, follow-up inspections will be conducted to ensure continued compliance with contract requirements. The frequency of the follow-up inspections will depend on the extent of the work being performed on each particular feature. Each follow-up inspection will be documented on the Follow-Up Inspection Checklist (Attachment 2), which will be attached to the daily CQCR. A final follow-up check will be conducted on any completed work phase prior to the commencement of a subsequent phase. Any deficiencies will be corrected prior to starting additional phases of work or will be identified on a Rework Items List (Attachment 2) for items that do not conform to the specified requirements or are incomplete.

Follow-up inspections will include and be documented in the daily CQCR:

- Ensure that work is in compliance with specifications and contract requirements.
- Maintain the quality of workmanship required.
- Verify that required tests are performed and satisfactorily completed by an approved laboratory.
- Verify that nonconforming conditions are identified and that any rework is corrected.

5.7 COMPLETION INSPECTION

Completion inspections will be performed as summarized in this section for applicable construction-related activities.

5.7.1 Quality Control Completion Inspections

The PQCM or designated FWENC QC inspection personnel will conduct a detailed inspection prior to the pre-final inspection, when all of the work or an increment of work is deemed to be substantially complete. The PjM and DON RPM and ROICC may also participate and will be notified in advance of the inspection date. The work will be inspected for conformance to plans, specifications, quality, workmanship, and completeness. The PQCM will prepare an itemized list of work not properly completed, inferior workmanship, or work that does not conform to plans and specifications. The list will also include outstanding administrative items, such as record (as-built) drawings, operation and maintenance manuals, and spare parts. The list will be submitted to the PjM and the DON ROICC and RPM within 5 workdays following the inspection and will specify an estimated date for correction of each deficiency. The completion inspection will be documented on the Completion Inspection Checklist, shown in Attachment 2, and attached to the CQCR.

5.7.2 Pre-final Inspection

The PQCM will conduct the pre-final inspection; the DON ROICC, FWENC QC inspection personnel, PjM, or other primary management representative, as applicable, will attend. The PjM or designee will schedule the pre-final inspection in response to notification from the PQCM prior to the planned inspection date. The PQCM will ensure that all specific items previously identified on the Rework Items List as being unacceptable, along with all remaining project work, will be complete and acceptable by the date scheduled for the pre-final inspection. At this inspection, the PQCM will develop a specific list of incomplete and/or unacceptable work performed under the contract and will provide this list to the PjM.

5.7.3 Final Acceptance Inspection

The ROICC will schedule the final acceptance inspection based upon results of the pre-final inspection. The inspection will include the PQCM, or other primary management personnel, the PjM, and the DON RPM and ROICC. Notification will be given to the ROICC at least 14 days prior to the final inspection stating that all specific items previously identified as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.

Completion Certification: Upon completion of work under a CTO, the PQCM will furnish a certificate to the ROICC attesting that the “work has been completed, inspected, and tested, and is in compliance with the contract”.

5.8 INSPECTION DOCUMENTATION

The PQCM is responsible for the maintenance of the inspection records. Inspection records will be legible and clearly provide all necessary information to verify that the items or activities inspected conform to the specified requirements or, in the case of nonconforming conditions, provide evidence that the conditions were brought into conformance or otherwise accepted by the PjM. All inspection records will be made available to the DON.

6.0 DOCUMENTATION

Preparation, review, approval, and issuance of documents affecting quality will be controlled, to the extent necessary, to determine that the documents meet specified requirements.

6.1 CONTRACTOR QUALITY CONTROL REPORT

The PQCM is responsible for maintenance of current records of QC operation, activities, and tests performed, including the work of subcontractors and suppliers. The records will include factual evidence that required QC activities and tests were performed. The daily CQCR will be completed to document site activities covered by the site PCQC Plan and will include:

- Record inspection and /or testing performed
- Identification and location of each DFW and its current phase (Preparatory, Initial, Follow-up) of completion
- Results of inspections/testing
- Location and description of deficiencies
- Deficiencies corrected as of the date of the report
- Rework items
- Deviations from plans, difficulties, and resolution
- Test and/or control activities performed with results and references to specifications/ plan requirements, including the control phase (Preparatory, Initial, and Follow-up) and deficiencies (along with corrective action)
- Material received, with statement as to its acceptability and storage
- Submittals reviewed with contract reference, by whom, and action taken
- Off-site surveillance activities, including actions taken

The records will indicate a description of both conforming and nonconforming features covered with a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The daily CQCR attached to the Contractor Production Report will be furnished to the ROICC on the first workday following the date covered by the report, except the report need not be submitted for days during which no work is performed. At a minimum, one report will be prepared and submitted for every 7 days of no work and on the last day of a no-work period. All calendar days will be accounted for throughout the life of the contract. The first report following a day of no work will summarize work for that day only. The report will be signed and dated by the PQCM and other appropriate personnel, including subcontractors responsible for completion of activities. The report will include copies of test reports. The report

will be provided to the ROICC for review by 10:00 a.m. on the work day following the day the work was performed or as agreed to by the ROICC.

6.2 CONTRACTOR PRODUCTION REPORT

The Contractor Production Report will be prepared for each day the work is performed and will be attached to the daily CQCR prepared for the same day. The Contractor Production Report will be prepared, signed, and dated by the Project Superintendent and will contain the following information:

- Contractor and subcontractor and their area of responsibility
- Location and description of work performed
- Trades working on the project that day and number of personnel
- Operating equipment, with hours worked, idle, or down for repair
- Work performed that day giving location, description, weather conditions, and by whom work was done
- Any delays encountered
- Site visitors/purpose
- Job safety evaluations stating what was checked, results, and instructions or corrective actions
- A list of instructions given/received and conflicts in plans and/or specifications
- Contractor's verification statement

6.3 CONFERENCE NOTES AND CONFIRMATION NOTICES

In addition to other required documentation, the PQCM is responsible for taking notes and preparing the reports of all conferences. Conference notes will be typed and the original report furnished to the DON within 5 days after the date of the conference for concurrence and subsequent distribution to all attendees. At a minimum, this report will include:

- Date and place the conference was held
- List of attendees, including name, organization, telephone and fax number, and email address
- Written comments presented by attendees attached to each report with the conference action noted: "A" for an approved comment, "D" for a disapproved comment, "W" for a comment that has been withdrawn, and "E" for a comment that has an exception noted
- Comments made during the conference and decisions affecting criteria changes
- Conference notes that augment the written comments

The PjM, or his designee, is also responsible for providing a record of all discussions, verbal directions, telephone conversations, and so forth, in which FWENC personnel or their representatives participating on matters relating to this contract and work. These records, titled "Confirmation Notices," will be numbered sequentially and will fully identify participating personnel, subject discussed, and any conclusions reached. The PjM, or his designee, will forward a reproducible copy of the confirmation notices to the DON RPM, or designee, and ROICC within 5 workdays.

6.4 TESTING PLAN AND LOG

As tests are performed, the PQCM will record on the Testing Plan and Log (Attachment 2), the date the test was conducted, the date the test results were forwarded to the ROICC, and remarks and acknowledgement that an accredited testing laboratory was used. The updated Testing Plan and Log will be attached to the last daily CQCR of each month.

6.5 REWORK ITEMS LIST

The PQCM will maintain a list of work that does not comply with the contract, identifying what items need to be reworked, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected. A rework item that is corrected the same day it is discovered will not be reported. The Rework Item List will be attached to the last daily CQCR of each month.

6.6 AS-BUILT DRAWINGS

FWENC will be responsible for preparing the as-built drawings for this project. The PQCM is responsible for ensuring that the field construction marked-up drawings are kept current on a daily basis and marked to show deviations that have been made from the contract drawings. Each deviation will be identified with the appropriate, modifying documentation. The PQCM will initial each deviation and each revision.

7.0 NONCONFORMANCES

The PQCM documents any work or materials not conforming to the technical specifications or project/contract requirements on an NCR (Attachment 2). The NCR will detail the nonconforming condition, the recommended corrective action(s), and the disposition of the corrective action(s). Qualified representatives from engineering, quality assurance, and construction will review the NCR and either accept or reject the recommended corrective action or disposition. The NCR will remain open until the nonconforming condition has been satisfactorily resolved and verified by the PQCM. Upon receipt of notification of detected nonconformance completion, an evaluation and acceptance report will be issued.

7.1 IDENTIFICATION OF NONCONFORMING ITEMS

Items identified as nonconforming will be documented on an NCR that will include the following information:

- Description of nonconforming item or activity indicating root causes of nonconformance to help prevent future occurrences
- Detailed description of nonconformance
- Referenced criteria
- Recommended disposition and corrective action to prevent recurrence, as applicable
- Anticipated completion date and who will perform corrective action
- Affected organization

Deficient conditions have been divided into three categories:

- In-process deficiencies
- Installed deficiencies
- Conditions that require Stop Work

7.1.1 In-Process Deficiencies

In-process deficiencies are those conditions discovered during the course of QC inspections that are intended to be corrected or brought into conformance with requirements. The PQCM will notify the Project Superintendent of the problem or deficiency. Items not solved or corrected will be noted as in-process deficiencies and will be noted briefly on the daily CQCR, detailed on a NCR, and added to the Rework Item List. Items that cannot be corrected will be considered installed deficiencies.

7.1.2 Installed Deficiencies

Installed deficiencies are those conditions discovered during the course of QC inspection of completed work that do not meet established acceptance criteria or requirements and are not intended to or cannot be brought into conformance. These conditions will be noted on the Rework Item List in addition to a NCR for evaluation and disposition. The PQCM will issue the NCR summarizing discrepancies within 24 hours of discovery.

In the event a NCR is not resolved within two calendar days after issuance, a notice of non-response will be issued to the PjM for additional action. Each report will be consecutively numbered, logged, and updated by the PQCM. Resolution of installed deficient conditions will be documented and approved by the PjM. Copies of completed reports will be sent to the ROICC.

7.1.3 Condition Requiring Stop Work

If corrective actions are insufficient, resolution cannot be reached, or a notice of non-response or results of prior work are indeterminate, work may be stopped by the PQCM. An immediate Stop Work Order can be issued by anyone for health and safety issues. The PQCM, PjM, or ROICC can issue a Stop Work Order in writing to the Project Superintendent who will direct site activities to stop.

The conditions of the Stop Work Order will be noted in the daily CQCR and described in detail on a NCR in addition to the Rework Item List to allow evaluation of the problem(s) and proper corrective action(s). Work will not continue until the Stop Work Order has been resolved by the PjM and documented.

7.1.4 NCR Log

The PQCM will maintain an NCR log which provides the NCR number, a brief description of the nonconforming condition, date of issue, point of contact to resolve, date of anticipated corrective action, and date closed.

7.2 NONCONFORMING ITEMS

The nonconforming items will be controlled to prevent inadvertent use of material or workmanship quality. All items noted as nonconforming will be clearly identified and segregated from acceptable items when practical.

7.3 DISPOSITION

The disposition of NCRs will include the necessary actions required to bring the nonconforming condition to an acceptable condition and may include reworking, replacing, retesting, or reinspecting. Implementation of the disposition may be done in accordance with the original procedural requirements, a specific instruction, or an approved FCR.

7.3.1 Field Change Requests and Design Change Notices

An FCR is used to request and document changes to approved plans, specifications, and drawings that occur in the field. The change will be qualified as follows:

- **Major Change**—one that affects the intent of the original design, including equipment, component, system, or structure that relates to function, operation, or safety of the designed product and/or personnel safety.
- **Minor Change**—one that does not affect the intent of the original design or product, including equipment, component, system, or structure that relates to function, operation, or safety.

Where the FCR is marked “Minor Change,” the change may be executed and, in parallel, obtain concurrence from the Project Engineer and PjM that the change was indeed “minor.”

Where the FCR is marked “Major Change,” a disposition must be sought before execution. An appropriately executed DCN will be issued for approval by the PjM. A DCN will not be issued for a “Minor Change” FCR. The FCR form is provided in Attachment 2.

7.4 CORRECTIVE ACTIONS

Upon detection of a nonconforming condition, the PQCM will immediately take corrective action. In addition to resolving identified nonconforming conditions, corrective action records will also address the initial cause of adverse conditions and establish methods and controls to prevent recurrence of the same or similar types of nonconformances. The PQCM will monitor the corrective actions to verify that they were properly implemented and accepted and that the original NCR was closed out.

8.0 QUALITY MANAGEMENT

In addition to the required QC field inspections, the FWENC Quality Program requires a quality management overview of the site QC Program implementation. The PQCM will perform regular internal QC checks on the site implementation of the QC Program. Deficiencies, if any, will be reported to the PjM for corrective action.

Inspection will be performed and checked for the following:

- Possession and use of approved procedures, standards, and project specifications
- Conformance with appropriate procedures, standards, and instructions
- Thoroughness of performance
- Identification and completeness of documentation generated during performance
- Recommending changes to continually improve project efficiency and effectiveness
- Assurance that personnel have been provided with instructions necessary to perform quality-related activities; a training program will be structured to emphasize correct performance of work and will provide for the following:
 - Achievement of initial proficiency
 - Maintenance of proficiency
 - Adaptations for changes in technology, methods, or job responsibilities

9.0 REFERENCES

- Foster Wheeler Environmental Corporation (FWENC). 1999. *Final Contractor Quality Control Program Plan*. April.
- Southwest Division Naval Facilities Engineering Command (SWDIV). 2000. *Naval Facilities Engineering Command Guide Specification* (NFGS).
- U.S. Army Corps of Engineers. 1996. *U.S. Army Corps of Engineers Safety and Health Manual*, COE EM-385-1-1. September.

TABLES

TABLE E.5-1

DEFINABLE FEATURES OF WORK

ACTIVITY	PREPARATORY	DONE	INITIAL	DONE	FOLLOW-UP	DONE
Pre-construction Survey	<ul style="list-style-type: none"> Ensure that project documents have been reviewed and approved for start of work. 		<ul style="list-style-type: none"> Ensure that photographs of the site are taken prior to any site work and submitted to ROICC. Verify that all site conditions are properly documented. 		<ul style="list-style-type: none"> Ensure that sensitive locations at the site are delineated and work crews are aware of restricted areas. 	
Mobilization/Site Preparation	<ul style="list-style-type: none"> Ensure that all procurements for products and subcontracted services have been awarded and submittals approved. Review project documents and verify that all meetings have been conducted and documented and that all notifications have been made. Ensure that all site personnel including subcontractors have submitted health and safety documentation. 		<ul style="list-style-type: none"> Ensure that materials and equipment delivered to the site are as identified in the RAWP and procurement documents. Ensure that work zones, including decontamination area are being constructed and/or delineated in the RAWP and Health and Safety Plan. 		<ul style="list-style-type: none"> Verify that temporary facilities have been installed as per RAWP and specifications. Verify compliance. 	
Pre-Construction Soil Sampling for Waste Characterization	<ul style="list-style-type: none"> Ensure that project FSP has been approved. Ensure that sampling equipment and materials will be available at the site and meet requirements of FSP. 		<ul style="list-style-type: none"> Ensure that proper equipment and materials have been delivered to the project site. Verify that work is being implemented in conformance with the FSP, RAWP, and Health and Safety Plan. Ensure that subcontract personnel for collection of samples have all training records available. 		<ul style="list-style-type: none"> Ensure that samples are adequately packaged and labeled and that COC forms have been prepared in conformance with FSP procedures. Ensure that locations of samples collected have been documented. 	
Construction Staking/Site Survey	<ul style="list-style-type: none"> Ensure that surveyor is licensed in California. Ensure that DON has provided the most current utility maps. 		<ul style="list-style-type: none"> Ensure that surveyor has the correct control point information. Survey is to be conducted in accordance with approved RAWP and subcontractor scope of work. 		<ul style="list-style-type: none"> Verify that survey work proceeding on schedule. Deliverables are received as required in scope of work. 	

TABLE E.5-1**DEFINABLE FEATURES OF WORK**

ACTIVITY	PREPARATORY	DONE	INITIAL	DONE	FOLLOW-UP	DONE
Implementation of Temporary Erosion and Sediment Control Measures	<ul style="list-style-type: none"> • Ensure that a site plan identifying sensitive areas is prepared. • Ensure that all procurements for products and subcontracted services have been awarded. • Review a SWMP with ROICC if plan required. 		<ul style="list-style-type: none"> • Ensure equipment and products are appropriate for work and are stored on site. • Identify inspection requirements. • Identify sensitive areas in field. 		<ul style="list-style-type: none"> • Inspect field control BMPs. • Document reporting requirements. 	
Utility Clearance	<ul style="list-style-type: none"> • Ensure that Dig Alert has assigned permit number. • Determine if field mark-outs have been made and inspected with ROICC. 		<ul style="list-style-type: none"> • Resolve utility locations that intersect with proposed work locations with Construction Superintendent and ROICC. 		<ul style="list-style-type: none"> • Hand-dig 18-inches to clear utility locations identified. 	
Facility Removal (tree removal, fence, play structures, etc.)	<ul style="list-style-type: none"> • Ensure that all procurements for products and subcontracted services have been awarded. • Review work with ROICC and verify work area and structures. 		<ul style="list-style-type: none"> • Verify that subcontractors have proper health and safety documentation. • Identify work areas in field. • Verify green waste that will be taken to recycling center. • Verify that the Class III landfill or other recycling centers for debris have been identified. 		<ul style="list-style-type: none"> • Inspect operation. • Ensure protective area boundaries are in place. 	
Soil Removal Backfill	<ul style="list-style-type: none"> • Ensure that all procurements for products and subcontracted services have been awarded. • Review work with ROICC and verify work area. • Review submittals from subcontractors. 		<ul style="list-style-type: none"> • Ensure that materials and equipment delivered to the site are as identified in the RAWP and procurement documents. • Verify subcontractor has health and safety documentation. • Verify import soil laboratory data meet project requirements. • Verify import soil meet specifications for size and suitability. 		<ul style="list-style-type: none"> • Inspect operation and ensure that only 2-inch material is incorporated into fill. • Protect work area from water run-off. • Review compaction data. 	

TABLE E.5-1

DEFINABLE FEATURES OF WORK

ACTIVITY	PREPARATORY	DONE	INITIAL	DONE	FOLLOW-UP	DONE
Drainage and Erosion Control Systems Construction	<ul style="list-style-type: none"> • Ensure that all procurements for products and subcontracted services have been awarded. • Review work with ROICC and verify work area. • Review submittals from subcontractors. 		<ul style="list-style-type: none"> • Ensure that materials and equipment delivered to the site are as identified in the RAWP and procurement documents. • Verify that subcontractors have proper health and safety documentation. 		<ul style="list-style-type: none"> • Protect work area from water run-off. • Ensure minimum slopes on drains, trench bottoms, etc. are constructed to the design specifications. • Ensure health and safety requirements for excavations are being implemented. 	
Landscaping	<ul style="list-style-type: none"> • Ensure that all procurements for products and subcontracted services have been awarded. • Review work with ROICC and verify work area. 		<ul style="list-style-type: none"> • Ensure that materials (sod and topsoil) and equipment delivered to the site are as identified in the RAWP and procurement documents. • Verify that subcontractors have proper health and safety documentation. • Verify import topsoil meet specifications for size and suitability. 		<ul style="list-style-type: none"> • Inspect sodding operation and ensure topsoil installed. 	
Decontamination Water or Other Waste Stream Sampling	<ul style="list-style-type: none"> • Ensure that project FSP has been approved. • Ensure that sampling equipment and materials will be available at the site and meet requirements of FSP. 		<ul style="list-style-type: none"> • Ensure that proper equipment and materials have been delivered to the project site. • Verify that work is being implemented in conformance with the FSP, RAWP, and Health and Safety Plan. • Ensure that subcontract personnel for collection of samples have all training records available. 		<ul style="list-style-type: none"> • Ensure that samples are adequately packaged and labeled and that COC forms have been prepared in conformance with FSP procedures. • Ensure that locations of samples collected have been documented. 	
Profiling of Waste	<ul style="list-style-type: none"> • Ensure that all analyses are available for profiling of wastes to disposal/recycling facilities. • Ensure that FWENC regulatory personnel prepare and review all profiling documents. 		<ul style="list-style-type: none"> • Ensure that all reviewed profile documents are submitted to the DON. 		<ul style="list-style-type: none"> • Verify that all documents have been approved by the DON and by the proposed disposal/ recycling facilities. 	

TABLE E.5-1

DEFINABLE FEATURES OF WORK

ACTIVITY	PREPARATORY	DONE	INITIAL	DONE	FOLLOW-UP	DONE
Transportation and Disposal of Soils and Water	<ul style="list-style-type: none"> • Ensure that all approvals are in place with the DON. • Ensure that wastes have been scheduled for transportation to disposal/recycling facilities. • Confirm schedule with DON for signing of shipping documents. • Set up and calibrate portable scales. 		<ul style="list-style-type: none"> • Verify that equipment and materials are in place for the loading and transportation of wastes. • Verify that adequate personnel are available for control traffic. • Verify that haulers of wastes have documentation of licenses as stated in the RAWP. 		<ul style="list-style-type: none"> • Verify that work has been performed in accordance with the RAWP. • Verify that copies of all waste documentation are being maintained in project files. 	
Site Decontamination (if required)	<ul style="list-style-type: none"> • Verify that all labor, equipment and materials are available to perform work as detailed in the RAWP. 		<ul style="list-style-type: none"> • Ensure that work is being performed in compliance with procedures detailed in the RAWP and Health and Safety Plan. 		<ul style="list-style-type: none"> • Visually inspect all areas and verify that decontamination has been performed in accordance with the RAWP. 	
Demobilization	<ul style="list-style-type: none"> • Ensure that all project work has been performed in conformance with the RAWP. • Perform walk through with DON personnel to confirm that all work has been completed. • Verify that personnel, equipment and materials are available for demobilization work. 		<ul style="list-style-type: none"> • Confirm that all work is being performed in accordance with the project documents. • Ensure that decontamination procedures are being performed in accordance with the project documents. 		<ul style="list-style-type: none"> • Ensure that all work has been performed in conformance with project documents. • Ensure that all documentation of this phase has been performed. 	

Notes:

BMP – Best Management Plan
COC – chain-of-custody
DON – Department of the Navy

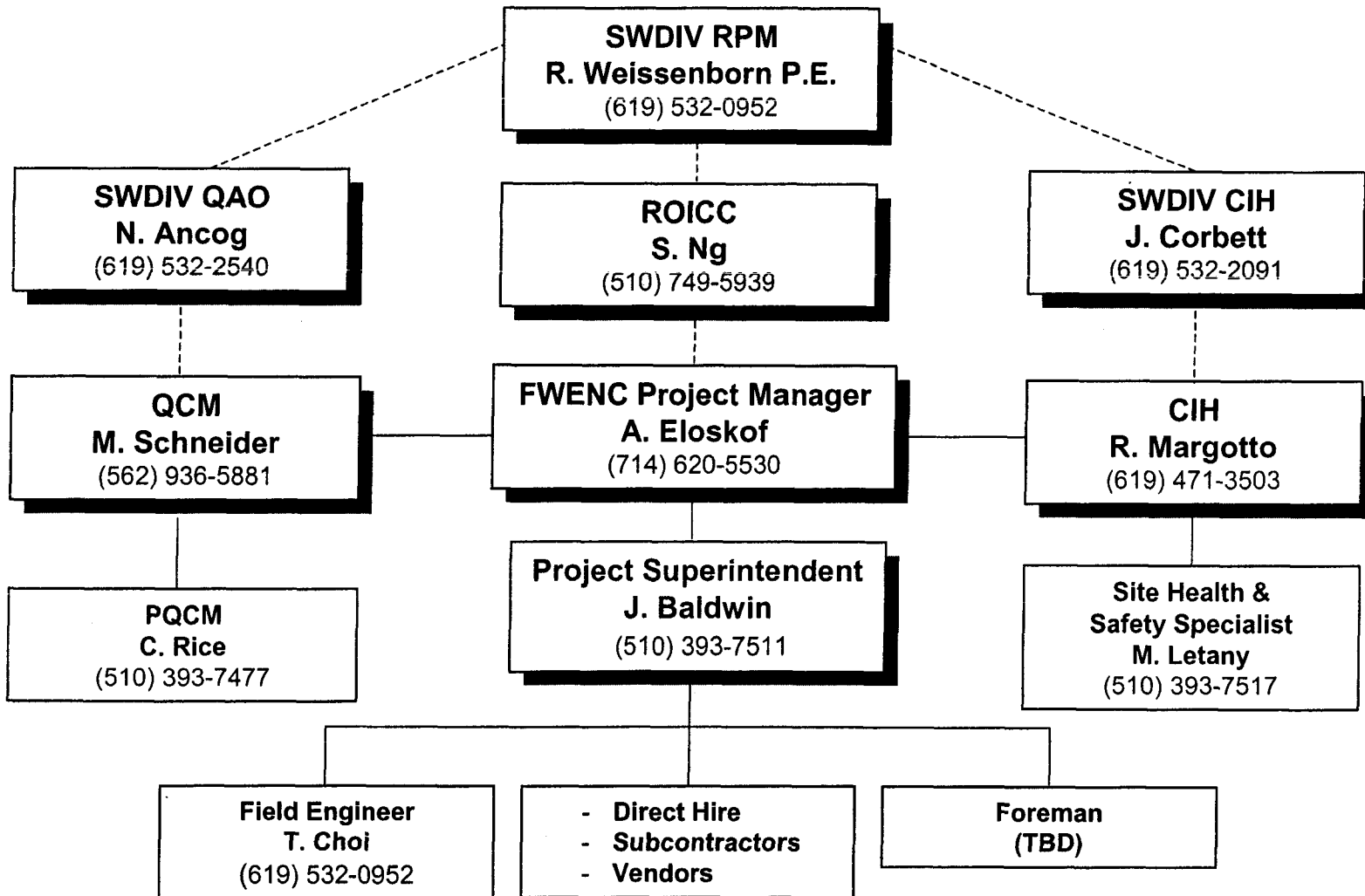
FSP – Field Sampling Plan
FWENC – Foster Wheeler Environmental Corporation
RAWP – Removal Action Work Plan

ROICC – Resident Officer in Charge of Construction
SWMP – Stormwater Management Plan

FIGURES

Figure E.2-1

Project Organization Chart



ATTACHMENT 1
APPOINTMENT LETTERS
AND RESUMES



FOSTER WHEELER ENVIRONMENTAL CORPORATION

November 26, 2001

Mr. Craig Rice
Foster Wheeler Environmental Corporation
1210 Marina Village Pkwy, Suite 102
Alameda, CA 94501

Subject: Project Quality Control Manager

Reference: Contract No. N68711-98-D-5713,
Southwest Division Naval Facilities Engineering Command (SWDIV)
Environmental Remediation Contract, Contract Task Order (CTO) No. 0040,
Alameda Point, Alameda, California

Dear Mr. Rice:

In accordance with the terms of Foster Wheeler Environmental Corporation's (Foster Wheeler Environmental) Contract No. N68711-98-D-5713, this letter notifies you of your appointment as the Project Quality Control Manager for CTO No. 0040 at Alameda Point, Alameda, California.

As the designated Project Quality Control Manager, you will be responsible to manage the site-specific quality control requirements in accordance with the Final Project Contractor Quality Control Plan. You will be responsible for conducting quality control meetings, perform the three phases of control, and perform submittal review. You will be required to be present during all quality control testing to ensure that any testing is conducted in accordance with required specification. In addition, you will be required to prepare the necessary quality control certification and documentation.

You have the authority and responsibility for suspending work when conditions adverse to quality are identified and for directing the correction of all non-conforming work.

This letter is effective immediately until modified by the Program Quality Control Manager with concurrence of the Foster Wheeler Environmental Project Manager, the SWDIV Remedial Project Manager, and the Resident Officer in Charge of Construction.

Sincerely,

Foster Wheeler Environmental Corporation

Mary Schneider
Program Quality Control Manager

cc: A Eloskof, Project Manager



EXPERIENCE SUMMARY

Mr. Rice joined Foster Wheeler Environmental Corporation after six years of apprentice ship performing field sampling, analytical laboratory testing, and oceanographic research experience with progressively greater supervisory responsibility. Environmental lab work focused on applying EPA and other standard quantitative methods to measure trace organic and inorganic pollutants in a wide variety of matrices including surface water, groundwater, wastewater, soils, sediments and hazardous materials. Has extensive hands-on experience using a wide variety of field analytical test methods and treatment process monitoring instrumentation. Published research for the marine mining industry addressed concerns with disposing of potentially toxic industrial tailings into the ocean.

Over the past 15 years, coordinated a broad range of scientific support services for CERCLA projects encompassing remedial investigations, feasibility studies, waste treatment alternatives and on-site remedial actions. Currently manages and supervises a variety of diverse science tasks in support of Foster Wheeler Environmental's EPA, USACE/TERC/BRAC, Navy RAC, and commercial contracts. Provides project-specific risk management consulting support and review for Foster Wheeler senior management that is incorporated into Do-It-Right planning for major government and industrial remediation contracts. Helps to facilitate the use of innovation and a risk-based approach to environmental clean up where appropriate. In addition to supervisory and field duties, develops and/or evaluates data quality objectives, field sampling techniques, analytical testing protocols, acquisition and reporting systems for scientific data, and QA/QC plans. Provides consulting services for field sampling, data interpretation, regulatory compliance and develops hazardous waste disposal options for Foster Wheeler Environmental managers, government and commercial clients.

EDUCATION

B.S. (Bachelor of Science), Chemistry, Duke University, Durham, NC, 1972

M.S. (Master of Science), Oceanography/Geochemistry, University of Hawaii, Honolulu, HI, 1983

REGISTRATIONS/CERTIFICATIONS

Commercial pilot/multi-engine/instrument

USA, #2142480, Date of Issue: 1/15/79, Date of Expiration:

TRAINING

40-Hour OSHA Hazardous Waste Site Worker Health and Safety Refresher Course, FWENC, May 2001

Red Cross/CPR Training, American Red Cross, May 2000

Waste Management Employee Training, FWENC, April 2000

USACE Construction Quality Management for Contractors, USACE, February 1999

Project Management - Level 200 Training, FWENC, February 1998

Loss Control Self-Study Course, FWENC, October 1997

Navy Data Quality Objectives/Data Quality Assessment Workshop, SW Div NFEC, September 1997

Project Management - Level 100 Training, FWENC, March 1994

DOT/HM-126F/49CFR 172 Subpart H - Designated Trainers Program, FWENC, October 1994



8-Hour OSHA Hazardous Waste Site Worker Health and Safety Supervisor Training, Enserch Environmental, October 1994

40-Hour OSHA Hazardous Waste Site Worker Health and Safety Training, Hazmat TISI, September 1988

FOSTER WHEELER ENVIRONMENTAL CORPORATION EXPERIENCE

Site QC Representative, June 2000 - October 2000

National Oceanic and Atmospheric Administration, Navy RAC II, N44255-95-D-6030: Delivery Order 0077, Petroleum-Contaminated Soils Remediation, St. Paul Island, AK

Mobilized and prepared thermal treatment site at this remote Bering Sea location. Assembled enhanced thermal conduction system for desorbing sandy soils contaminated with petroleum-based wastes (primarily diesel fuel). Operated, maintained and trained local personnel to use this system. Provided QC oversight and daily progress reporting to managers and regulators. Performed preoccupancy baseline and post-treatment verification field sampling, and reviewed laboratory data to determine waste disposal status.

Project Chemist, February 1998 - September 1998

Ford Motor Company, Law Engineering Landfill Remediation Project-Operable Unit Two, 41-963508, Smith's Farm Landfill Remediation, Shepardsville, KY

Completed construction, start-up and conducted successful performance testing of automated on-site Leachate Treatment Facility to purify hazardous landfill leachate for discharge to local stream. Multi-component treatment process included Sequential Batch Reactor (SBR) Cyclic Activated Sludge System (CASS), metals precipitation by hydroxylation/flocculation/clarification, final pH adjustment, shallow-tray aeration, filtration and Granular Activated Carbon (GAC) adsorption. Developed operation and maintenance procedures and trained client's operators.

Project Chemist, May 1997 - February 1998

Calpine Corporation, Consulting Agreement, FWENC#1725, Sutter Power Plant-Application for Certification, Yuba City, CA

Worked closely with client and California Energy Commission to develop water resources section for this AFC of a 500 megawatt natural-gas fired electric power generating facility in Sutter County, California. Described the hydrogeologic setting, assessed impacts to the local aquifer, documented surface water baseline quality, flow and usage, and performed a flood hazard and site drainage analysis. Proposed an innovative water source alternative, identified and explained the rationale for selecting the source of choice, reviewed plans for storm water treatment and discharge, and prepared an NPDES permit application for process wastewater discharged to surface drainage.

Project Chemist, November 1996 - August 1998

Chevron Master Services Agreement, RMP-6097/FWENC#1649, Chevron Stormwater Management & Treatment, Richmond, CA

Expedited development of a comprehensive plan to manage storm water runoff at the Richmond, California Facility. Wrote a field sampling and analysis plan for collecting storm water, led the implementation of that plan during three significant rain events, compiled and interpreted the data, identified point sources of contaminants (arsenic, pesticides, chlorinated VOCs), and proposed techniques for minimizing their accumulation in the site storm water collection system. During follow-on phases of the project, actions recommended in Phase 1 were fully implemented. Performed treatability studies to verify recommended water treatment technologies, developing plant performance specifications, providing

a list of qualified vendors for procuring an automated water treatment facility, supervised installation, start-up and operation of the new modular water treatment plant.

Project Chemist, March 1995 - May 1995

U.S. Army Corps of Engineers, New England TERC, FWENC 1102, Engelhard Site RI/FS/RA, Plainville, MA

Performed bench-scale treatability study to determine best solidification/stabilization technology on HTRW-contaminated soils from this site. The Engelhard facility was a former site for industrial fabrication of steel alloys, uranium fuel elements and precious metal stock for the jewelry industry. The goal was to produce a solidified/stabilized material that met site-specific performance standards for heavy metal mobility and geotechnical characteristics. Preliminary formulations were developed, tested and evaluated from which initial cost estimates could be made. A formal report was submitted containing the results of bench-scale treatability experiments, interpretation of the leaching data and predicted field handling characteristics in a successful demonstration of the sequestration of potentially toxic metals, primarily cadmium, in contaminated soils from the site.

Lead Chemist, December 1994 - November 1995

Unocal/Molycorp, Surface Impoundment Closure Project, Washington, PA

Designed and executed a statistically random field sampling program to characterize sludges, sediments and soils associated with a series of surface impoundments used during production of metal alloys. Performed treatability study on filter cake samples generated from dewatering and developed a cost-effective fixation/stabilization formula using cement and pozzuolanic fly ash from a local source that effectively sequestered heavy metals and achieved satisfactory characteristics for non-RCRA disposal.

Project Scientist, March 1994 - May 1999

U.S. EPA, ARCS-II, American Thermostat Site Remediation, Catskill, NY

Provided technical oversight during the design, construction, start-up and performance testing of two direct-fired, rotary kiln thermal treatment systems. The operable units thermally desorbed site soils contaminated with spent chlorinated solvents (primarily PCE and TCE) generated during the manufacture of small electrical devices for household appliances. Prequalified subcontractor's analytical laboratories and performed field QA audits during stack emissions testing and routine operations. Evaluated effectiveness of thermal treatment process during start-up and trial burn phases of the project. Wrote sampling plans to verify final clean-up standards had been achieved.

Project Chemist, October 1992 - July 1996

Agribusiness Technologies, Inc., Times Beach and Eastern Missouri Dioxin-Contaminated Soil Remediation Project, EBASCO #AGRI 3195, Times Beach Dioxin Cleanup, Eureka, MO

Planned and supervised field sampling activities, subcontractor laboratory support and assigned data validation tasks. Reviewed final data results and performed statistical analyses to determine the aerial and vertical extent of dioxin contamination. Verified that on-site excavations had successfully remediated specific areas and ensured all potentially contaminated areas of the site were sufficiently characterized. Reviewed groundwater and wastewater analytical data and advised project engineers regarding drinking water treatment, SDWA regulatory compliance and NPDES discharge requirements. In addition, reviewed RCRA Part B permit applications and provided oversight and enforcement of QA programs for trial burn, routine incinerator operation and decommissioning phases of the project.

Lead Chemist, August 1991 - August 1993

Chevron USA, Chevron Master Services Agreement, CUSA 4395, Surface Impoundments and Landfarm Closure Project, Perth Amboy, NJ

A key participant in developing a comprehensive performance monitoring plan to manage and evaluate preliminary field demonstration activities (Phase 1) for a dewatering and drying process for treating RCRA-listed and characteristic sludges from three surface impoundments. Statistical data evaluations and risk summaries were also provided in a successful effort to close a bioremediation landfarm located on the refinery site.

Project Chemist, October 1989 - December 1996

U.S. Army Corps of Engineers, Lagoon and Project Site Clean-up, DACW41-89-0053, Bridgeport Rental and Oil Services (BROS) Remediation Project, Bridgeport, NJ

Developed a site-specific Chemical Quality Management Plan, wrote numerous matrix-specific field sampling plans, provided air quality impact and health risk assessments, executed permit equivalencies and completed waste manifesting documents. Responsible for reviewing analytical data as well as for conducting system audits of the six subcontractor laboratories performing analytical support to this \$180 million Superfund clean-up project run by the U.S. Army Corps of Engineers. In addition, supervises field chemists performing on-site chemical testing and trains field sampling teams to collect air, water, sediment and waste samples. Conducted bench-scale treatability experiments and developed several effective formulations for fixation/stabilization of Pb and Cd in the bottom ash and filter cake (wet scrubber residue) generated by on-site incineration of lagoon sediments. Numerous formulations of Portland cement, fly ash, and sodium silicate were tested, and a final process was developed for full-scale field use. A comprehensive FSAP was developed concurrently and approved by the USACE. The process has been effective at sequestering heavy metals and results in a product that passes the TCLP and all geotechnical requirements for on-site backfill.

Project Chemist, June 1987 - February 1988

State of New Jersey, Burnt Fly Bog Upland Site Remediation, Marlboro, NJ

Developed an on-site stabilization process using fly ash and kiln dust. Managed an on-site laboratory program and tested stabilized soils/sludges for UCS, pH, lead and PCB with rapid data reporting. Developed a method to screen feed materials for lead and arsenic content by XRF Spectrometry, and provided near-real-time data to the process engineers and geologists. Coordinated off-site lab support for verification of compliance with site closure requirements.

PREVIOUS EXPERIENCE

Senior Chemist, May 1985 - September 1986

State of Texas, Laboratory Services, Texas Railroad Commission Mining and Reclamation Laboratory, Austin, TX

Responsibilities included analyzing surface water, groundwater and drilling effluent for various hydrocarbons by GC. Developed a rapid screening method for "fingerprinting" gasoline, diesel fuel and fuel oil to detect contamination problems and identify their source. Set up a Dionex ion chromatographic system for rapid detection of low concentrations of common inorganic anions and developed rapid and accurate wet chemistry methods for measuring sulfate and nitrate in groundwater.

Staff Scientist, February 1984 - April 1985**Underground Resource Management, Chemical and Geotechnical Laboratory Services, In-house Laboratory Analysis, Austin, TX**

Responsibilities were in capillary column gas chromatography, trace metals and total organic carbon analyses. Gained field sampling experience with groundwater, wastewater, potable water supplies and monitor well systems including land farms and solid waste disposal sites. Provided analytical data for PCB clean-up and site closure programs. Consulted with the engineering staff of major industrial clients concerning waste stream pretreatment and resource recovery projects. Thus, gained practical experience analyzing environmental samples using a wide variety of standard EPA analytical methods.

Graduate Research Assistant, January 1980 - October 1983**University of Hawaii, Scientific Investigation for the Department of Business and Economic Development Marine Mining Program, UNIH-CR-88-02, The Predicted Effects of Manganese in the Photic Zone, Honolulu, HI**

Wrote research proposals and secured funding from private industry, state agencies and the federal government to construct a trace metals laboratory for ocean mining research. Conducted analyses by flame and electrothermal AAS to characterize the heavy metal content of tailings produced by manganese nodule mining activities. Designed and conducted biochemical studies to determine the effects of elevated concentrations of manganese on marine plankton and also conducted geochemical investigations to predict the fate of industrial tailings containing high levels of leachable manganese in the surface layer of the ocean.

PUBLICATIONS & PRESENTATIONS

Rice, Craig W. 1987. The Predicted Effects of Manganese in the Photic Zone. Sea Grant Publication. UNIH-CR-88-02, Department of Business and Economic Development, Marine Mining Program, Honolulu, Hawaii.

DISCIPLINE CODES

Chemical Experts: 136, Primary
Oceanographers: 017, Secondary
Sanitary Engineers: 019, Secondary
Laboratory Experts: 105, Secondary
Environmentalists: 106, Secondary
Production Experts: 118, Secondary
Testing Engineers: 125, Secondary
Aircraft/Marine Personnel: 130, Secondary
Divers: 177, Secondary

SKILL SET**CHEMICAL SCIENCE**

Atomic Absorption
Air Sampling
Chemical Data Acquisition Plan
Drum Sampling
Enzyme Linked Immunoassay
Field QA Audits
Field/Mobile Laboratory
Oversight
Field Operations Leader
Feasibility Study
Field Sampling and Analysis Plan
Fate and Transport
Analysis/Modeling
Gas Chromatography
Geotechnical Sampling

Groundwater/Surface Water
Sampling
Volatile Headspace Analysis
Inorganics
Laboratory QA Audits
Analytical Method Development
Nuclear Magnetic Resonance
National Pollution Discharge
Elimination System
Quality Assurance Plan
Risk Assessment
Radionuclides
Resource Conservation Recovery
Act
Remedial Action
Remedial Investigation

Remedial
Investigation/Feasibility Study
Site Closure Plan
Soil Gas Analysis
Site Characterization
Soil/Sediment Sampling
Tanks Sampling
Task Leader
Wet Chemistry
Work Plan
X-Ray Fluorescence

LANGUAGE SKILLS

English *Knowledge Level:* Primary
German *Knowledge Level:* Secondary: Familiar

PROFESSIONAL REFERENCES

Larry Carter, Senior Vice President, FWENC, (561) 781-3405
Charlie Stanfield, Senior Project Manager, FWENC, (865) 574-2838
Charlene Wardlow, Environmental Project Manager, Calpine Corporation, (707) 431-6079

RELATED COMPANY INFORMATION

Office Location: Alameda
FWENC Hire Date: 9/26/86
Years with Other Firms: 6
Daytime Telephone: 916-928-4832
E-mail Address: Crice@FWENC.com

EXPERIENCE SUMMARY

Ms. Vaughns-Rachal has nearly 13 years working in Geotechnical and Environmental Engineering. As a Geotechnical Engineer, she spent three (3) years conducting fieldwork, site reconnaissance, data analyses, and writing reports for projects nationwide. The remaining 10 years have been spent working on Environmental Engineering projects. Ms. Vaughns-Rachal's tasks have been to project manage several hundred RCRA-regulated underground storage tank site investigations, perform fieldwork-soil classification and groundwater sampling, data analyses, evaluation, write reports for the projects nationwide. These projects include those from CERCLA, state, municipal, and the private sector.

Experience with FWENC includes performing soil classification, performing geotechnical data analyses for foundations, acting as Community Relations and Geotechnical Engineering lead for the Navy.

EDUCATION

M.S. (Master of Science), Geotechnical Engineering, University of California, Berkeley, CA, 1988

B.A. (Bachelor of Arts), Paleontology, University of California, Berkeley, CA, 1984

Coursework in Engineering & Geology, San Jose State University, San Jose, CA, 1984-1988

REGISTRATIONS/CERTIFICATIONS

Corrective Action Specialist

TX, #000548, Date of Issue: 7/1995, Date of Expiration: 7/2000

Hazwoper

CA, Date of Issue: 2001, Date of Expiration: 2002

TRAINING

Waste Management Training, FWENC, Mar 2001

DOT Training, FWENC, Dec 2000

Dredging Fundamentals, Army Corps of Engineers, June 2001

OSHA 1910.120 (e)(8) Refresher Training, FWENC, May 2001

Risk-Based Corrective Action: The ASTM Guidelines, University of Houston, 1998

Environmental Chemistry, Texas A&M Extension, 1997

The Manager/Supervisor's Role-Quality Education system for the Individual, Philip Crosby Associates, 1993

Diversity Training, Chevron USA, 1993

Technical Writing for Oil and Gas Professionals, Shipley & Associates, 1993

The Psychology of Achievement, The Phoenix Seminar by Brian Tracy, 1992

The Priority Manager, Priority Management Systems, 1992

FOSTER WHEELER ENVIRONMENTAL CORPORATION EXPERIENCE

Project Engineer, November 2000 - present

US Navy, Moffett Federal Airfield, EFANW-RAC II (N44255-95-D-6030), First Annual Groundwater Report, Mountain View, CA

Wrote the first draft of the TCE section to be included in the report. This included analyzing numerous data and determining whether or not the existing data followed existing patterns. Drew conclusions based on the data and included this in the section.

Community Relations Lead, November 2000 - Mar 2001

Mountain View, CA

Worked with a senior Community Relations Specialist to plan a Community Relations Activity throughout the entire project. This included multiple report deadlines, numerous meetings, and obligations to the public. Wrote a detailed bid to procure a Community Relations contractor to assist with the workload and work directly with the client.

PREVIOUS EXPERIENCE

Project Manager (Operations Manager), February 1998 - July 2000

Regenesys Solutions, Inc., Spartanburg, Spartanburg, South Carolina

Solicited a team of experts to relocate an entire community from an environmentally dangerous site. Wrote the contracts and procured each player. Developed a strategy for implementing the work and wrote a proposal to the Appropriations Committee in Washington, D.C. for approval. Set the budgets, scheduled and conducted meetings, coordinated the team for planning and presented a redevelopment plan to a South African delegation and the Executive Director for Livable Communities (assistant to former Vice President Al Gore). Acted as liaison between the client and federal agencies. Wrote funding proposals to private entities.

Consultant, July 1994 - September 2000

The Minute Maid Company, 12494, Alpine Groves, Avon Park, Florida

Managed a RCRA-regulated underground storage tank facility by hiring a local contractor to conduct the field activities and procure associated subcontractors needed to perform other duties. Acted as liaison between the client and two (2) state regulatory agencies. Perform the toxicological review evaluation for constituents in chemicals used at the client's juice plant. Prepared the state "Pre-approved Cleanup" application to allow the client to share remediation costs with the state. The client saved 37% of his budget.

Environmental Project Manager, December 1991 - April 1994

Chevron USA Products Company, Houston, Texas

Managed several hundred RCRA-regulated underground storage tank investigations in Southern Louisiana and Mississippi. Evaluated and reviewed numerous reports, including remedial design technologies used to clean impacted soil and groundwater. Supervised four (4) contractors and developed an internal Groundwater Sampling/Operations & Maintenance crew. Demonstrated that the company would save over 40% of the total budget by using the internal team. Saved another 12% of the total budget by strategically procuring upcoming work to selected contractors. Prepared a regional bid, which included writing the general specifications and health and safety plan. Developed a positive relationship with two (2) regulatory agencies.

Engineering Geologist, January 1989 - July 1991

CH2M Hill, Parsippany, New Jersey

Organized and supervised fieldwork and laboratory activities for numerous Geotechnical and Environmental projects nationwide, ranging from CERCLA to private sector. Performed soil classification and groundwater sampling nationwide. Wrote landfill specifications and ran slope stability programs to assist in designing landfill embankments. Performed site reconnaissance, analyzed data, which included calculations, and wrote reports regarding the findings.

PUBLICATIONS & PRESENTATIONS

Tajma Vaughns-Rachal. 2000. Redevelopment of Arkwright Community. Presentation. South African Delegation and the Executive Director for Livable Communities. Spartanburg, South Carolina.

Tajma Vaughns-Rachal. 1994. Innovative Technologies Used in Louisiana. Presentation. Louisiana Department of Environmental Quality (LDEQ). Lafayette, Louisiana.

Michelle O. Cowherd and Tajma Vaughns-Rachal. 1994. Responsible Party Perspective: Benefits, Hurdles, and Solutions. Presentation. Air & Waste Management Association. St. Louis, Missouri.

Tajma Vaughns-Rachal. 1990. San Francisco Bay Region: Down drag Problem at a Wastewater Treatment Plant. Technical Publication and Presentation. National Society of Women Engineers (SWE). New York City, New York.

PROFESSIONAL AFFILIATIONS

Society of Women Engineers, member, 1994

American Society of Civil Engineers, member, 1991

DISCIPLINE CODES

Soils Engineers: 020, Primary

Geologists: 011, Secondary

Environmental Engineers: 195, Secondary

SKILL SET

Biological Sciences

Environmental Assessments

Environmental Engineering

Groundwater Sampling

Soils

Chemical Sciences

Field Sampling and Analysis Plan

Geotechnical Sampling

Remedial Investigation

Site Characterization

TECHNICAL EXPERTISE

Biostratigraphy, geotechnical calculations

LANGUAGE SKILLS

English

Knowledge Level: Primary

PROFESSIONAL REFERENCES

Curtis Dumas, P.E., Owner, Dumas Environmental Services, 713-697-0600

Dr. Lisa White, Professor, San Francisco State University, 415-338-1209

Eileen Hughes, M.S., Engineer, Department of Toxic Substances Control, 510-540-3760

RELATED COMPANY INFORMATION

Office Location: Home

FWENC Hire Date: 9/29/00

Years with Other Firms: 6

Daytime Telephone: 510-863-0139

E-mail Address: TvaughnsRachal@fwenc.com

ATTACHMENT 2

QUALITY CONTROL FORMS

TESTING PLAN AND LOG

[illegible]

SUBMITTAL REGISTER

[illegible]

CATALOG CUT/SHOP DRAWING TRANSMITTAL AND APPROVAL
SOUTHWESTNAVFACENGCOM 4355 / 2 (10-89)

See instructions on reverse
No carbon paper is required to complete this form
No transmittal letter required

SUBMITTAL NO.	CQC CLAUSE <input type="checkbox"/> IS APPLICABLE <input type="checkbox"/> IS NOT APPLICABLE	
REFERENCES TO USE WHEN CQC CLAUSE IS APPLICABLE	PART I – FOR CONTRACTOR USE	REFERENCES TO USE WHEN CQC CLAUSE IS NOT APPLICABLE
(A) ROICC/REICC	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <small>FROM (Contractor)</small> Foster Wheeler Environmental Corporation 1230 Columbia Street, Suite 640 San Diego, CA 92101 </div> <div style="width: 45%;"> <small>TO (A)</small> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%;"><small>CONTRACT NO.</small></div> <div style="width: 65%;"><small>CONTRACT TITLE</small></div> </div>	(A) DESIGNER
(B) (Check one) <input type="checkbox"/> RECORD <input type="checkbox"/> APPROVAL	THE FOLLOWING ITEM IS SUBMITTED FOR (B) PER SPECIFICATION SECTION NUMBER <hr/>	(B) APPROVAL
	<small>CERTIFICATION (This form shall not be used to forward proposed substitutions)</small> IT IS HEREBY CERTIFIED THAT THE <input type="checkbox"/> EQUIPMENT <input type="checkbox"/> MATERIAL SHOWN AND MARKED IN THIS SUBMITTAL IS THAT PROPOSED TO BE INCORPORATED INTO CONTRACT N68711-98-D-5713, CTO 0040 IS IN COMPLIANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS AND CAN BE INSTALLED IN THE ALLOCATED SPACES.	
(C) AUTHORIZED CONTRACTOR QUALITY CONTROL REPRESENTATIVE	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"><small>CERTIFIED BY (C)</small></div> <div style="width: 45%;"><small>DATE</small></div> </div>	(C) PERSON DESIGNATED BY CONTRACTOR AS HAVING AUTHORITY TO SIGN CERTIFICATION
	PART II – FOR DESIGNER USE	
	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"><small>FROM (Designer)</small></div> <div style="width: 45%;"><small>TO (ROICC/REICC)</small></div> </div>	
CURSORY REVIEW REQUIRED ON RECORD COMES – REPLY TO ROICC ONLY IF APPROPRIATE. DETAILED REVIEW REQUIRED ON SUBMITTALS FOR GOVERNMENT APPROVAL STAMP AND MARK EACH COPY AS APPROPRIATE.	THIS SUBMITTAL HAS BEEN REVIEWED (D). THE FOLLOWING RECOMMENDATION IS MADE: <hr/>	(D) DETAILED REVIEW REQUIRED. STAMP AND MARK EACH COPY AS APPROPRIATE
	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"><small>SIGNATURE</small></div> <div style="width: 45%;"><small>DATE</small></div> </div>	
	PART III – FOR ROICC/REICC USE	
(E) DESIGNER (Copy to ROICC)	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"><small>FROM (ROICC/REICC)</small></div> <div style="width: 45%;"><small>TO (E)</small></div> </div>	(E) CONTRACTOR (Copy to ROICC)
	ENCLOSURES ARE RETURNED WITH THE FOLLOWING COMMENTS: <hr/>	
	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"><small>SIGNATURE</small></div> <div style="width: 35%;"><small>DATE</small></div> </div>	

INSTRUCTIONS

Enter submittal number.
Check applicable CQC clause.

CONSTRUCTION CONTRACTOR – PART I

From: Construction contractor's name and address.
To: Designer's name and address or ROICC/REICC as applicable.

Enter contract number.

Enter title of contract and location.

Describe item being transmitted. A separate form must be used for each set of catalog cuts or shop drawings. Include name of manufacturer, catalog sheets, drawing no., name of item, and number of copies forwarded.

Check submittal for record or approval purposes.

Type date and name.

Sign original and one.

Distribution (as applicable to CQC clause):

Send to designer: original and four transmittal forms with the seven copies of catalog cuts or shop drawings.
When factory inspection is required, send eight copies.

Send to ROICC/REICC: one carbon copy of form.

Send to ROICC/REICC (CQC): Original and three copies of catalog cuts or shop design.

Retain one copy for your files.

DESIGNER (A&E CONTRACTOR, SOUTHWESTNAVFACENGCOM) OR ROICC RESPONSIBLE FOR DESIGN – PART II

From: Designer's name and address.
To: ROICC/REICC and address.

Enter recommended action (i.e., approval recommended or disapproved, with appropriate comments).

Type date and name.

Sign original and one.

Distribution:

Send to ROICC/REICC: original and three copies with six (or seven when factor inspection is required) copies of catalog cuts or shop drawings.

Retain one copy of form and one copy of cuts or drawings for your files.

ROICC OR REICC – PART III

From: ROICC or REICC and address.
To: Construction contractor's name and address.

Enter action taken (i.e., approved subject to, etc.).

Type date and name.

Sign original and one.

Distribution:

Send to construction contractor: original with three copies of cuts or drawings

Send to ROICC one carbon copy of form with one copy of cut or drawings.

Retain two copies of form and two copies of cuts or drawings: one for field use and one for ROICC/REICC file.

NOTE: When factory inspection is required, forward one approved copy of cuts or drawings to the ROICC, Construction Division. Cover transmittal should state the information is forwarded for factory inspection.

CONTRACTOR PRODUCTION REPORT						DATE	
(ATTACH ADDITIONAL SHEETS IF NECESSARY)							
CONTRACT NO N68711-98-D-5713		TITLE AND LOCATION CTO #0040, CERCLA TCRA IR Site 25, Alameda Point, Alameda, CA				REPORT NO	
CONTRACTOR FOSTER WHEELER ENVIRONMENTAL CORPORATION				SUPERINTENDENT			
AM WEATHER		PM WEATHER			MAX TEMP (F)		MIN TEMP (F)
WORK PERFORMED TODAY							
WORK LOCATION AND DESCRIPTION		EMPLOYER	NUMBER	TRADE		HRS	
JOB SAFETY	WAS A JOB SAFETY MEETING HELD THIS DATE? (If YES attach copy of the meeting minutes)		<input type="checkbox"/> YES	<input type="checkbox"/> NO	TOTAL WORK HOURS ON JOB SITE, THIS DATE, INCL CONT SHEETS		
	WERE THERE ANY LOST TIME ACCIDENTS THIS DATE? (If YES attach copy of completed OSHA report)		<input type="checkbox"/> YES	<input type="checkbox"/> NO	CUMULATIVE TOTAL OF WORK HOURS FROM PREVIOUS REPORT		
	WAS CRANE/MANLIFT/TRENCHING/SCAFFOLD/HV ELEC/HIGH WORK/HAZMAT WORK DONE? (If YES attach statement or checklist showing inspection performed.)		<input type="checkbox"/> YES	<input type="checkbox"/> NO	TOTAL WORK HOURS FROM START OF CONSTRUCTION		
	WAS HAZARDOUS MATERIAL/WASTE RELEASED INTO THE ENVIRONMENT? (If YES attach description of incident and proposed action.)		<input type="checkbox"/> YES	<input type="checkbox"/> NO			
LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED						<input type="checkbox"/> SAFETY REQUIREMENTS HAVE BEEN MET.	
EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB (INDICATE SCHEDULE ACTIVITY NUMBER)							
Submittal #	Description of Equipment/Material Received						
CONSTRUCTION AND PLANT EQUIPMENT ON JOB SITE TODAY. INDICATE HOURS USED AND SCHEDULE ACTIVITY NUMBER.							
Owner	Description of Construction Equipment Used Today (incl Make and Model)	Arrival	Off Rent Date	Actual Demob Date	Hours Idle	Hours Used	Reason for Idle
REMARKS							
CONTRACTOR/SUPERINTENDENT			DATE				

CONTRACTOR QUALITY CONTROL REPORT				DATE Enter (DD/MMM/YY)	
(ATTACH ADDITIONAL SHEETS IF NECESSARY)				REPORT NO Enter Rpt # Here	
PHASE	CONTRACT NO N68711-98-D-5713, CTO No. 0040	CONTRACT TITLE CERCLA TCRA IR Site 25, Alameda Point, Alameda, CA			
PREPARATORY	WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES <input type="checkbox"/> NO <input type="checkbox"/> IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.				
	Schedule Activity No.	Definable Feature of Work	Index #		
INITIAL	WAS INITIAL PHASE WORK PERFORMED TODAY? YES <input type="checkbox"/> NO <input type="checkbox"/> IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST.				
	Schedule Activity No.	Definable Feature of Work	Index #		
FOLLOW-UP	WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES <input type="checkbox"/> NO <input type="checkbox"/> WORK COMPLIES WITH SAFETY REQUIREMENTS? YES <input type="checkbox"/> NO <input type="checkbox"/>				
	Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location and List of Personnel Present			
REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)			REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)		
Schedule Activity No.	Description	Schedule Activity No.	Description		
REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above That Was Answered "NO"), Manuf. Rep On-Site, etc.					
Schedule Activity No.	Description				
_____ AUTHORIZED QC MANAGER AT SITE DATE					
GOVERNMENT QUALITY ASSURANCE REPORT					
DATE					
QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT					
Schedule Activity No.	Description				
_____ GOVERNMENT QUALITY ASSURANCE MANAGER DATE					

PREPARATORY PHASE CHECKLIST		SPEC SECTION	DATE
(CONTINUED ON SECOND PAGE)			
CONTRACT NO N68711-98-D-5713, CTO No. 0040	DEFINABLE FEATURE OF WORK	SCHEDULE ACT NO.	INDEX #
PERSONNEL PRESENT	GOVERNMENT REP NOTIFIED _____ HOURS IN ADVANCE: YES <input type="checkbox"/> NO <input type="checkbox"/>		
	NAME	POSITION	COMPANY/GOVERNMENT
SUBMITTALS	REVIEW SUBMITTALS AND/OR SUBMITTAL REGISTER. HAVE ALL SUBMITTALS BEEN APPROVED? YES <input type="checkbox"/> NO <input type="checkbox"/>		
	IF NO, WHAT ITEMS HAVE NOT BEEN SUBMITTED? _____		
	ARE ALL MATERIALS ON HAND? YES <input type="checkbox"/> NO <input type="checkbox"/>		
	IF NO, WHAT ITEMS ARE MISSING? _____		
MATERIAL STORAGE	ARE MATERIALS STORED PROPERLY? YES <input type="checkbox"/> NO <input type="checkbox"/>		
	IF NO, WHAT ACTION IS TAKEN? _____		
SPECIFICATIONS	REVIEW EACH PARAGRAPH OF SPECIFICATIONS. _____		
	DISCUSS PROCEDURE FOR ACCOMPLISHING THE WORK. _____		
PRELIMINARY WORK & PERMITS	ENSURE PRELIMINARY WORK IS CORRECT AND PERMITS ARE ON FILE.		
	IF NOT, WHAT ACTION IS TAKEN? _____		

TESTING	IDENTIFY TEST TO BE PERFORMED, FREQUENCY, AND BY WHOM. _____

	WHEN REQUIRED? _____

	WHERE REQUIRED? _____

	REVIEW TESTING PLAN. _____

	HAS TEST FACILITIES BEEN APPROVED? _____
SAFETY	ACTIVITY HAZARD ANALYSIS APPROVED? YES <input type="checkbox"/> NO <input type="checkbox"/>
	REVIEW APPLICABLE PORTION OF EM 385-1-1. _____

MEETING COMMENTS	NAVY/ROICC COMMENTS DURING MEETING.

OTHER ITEMS OR REMARKS	OTHER ITEMS OR REMARKS:

<div style="display: flex; justify-content: space-between;"> <div>QC MANAGER _____</div> <div>DATE _____</div> </div>	

INITIAL PHASE CHECKLIST		SPEC SECTION	DATE																								
CONTRACT NO N68711-98-D-5713, CTO No. 0040	DEFINABLE FEATURE OF WORK	SCHEDULE ACT NO.	INDEX #																								
PERSONNEL PRESENT	GOVERNMENT REP NOTIFIED _____ HOURS IN ADVANCE: YES <input type="checkbox"/> NO <input type="checkbox"/> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%; padding: 5px;">NAME</th> <th style="width: 30%; padding: 5px;">POSITION</th> <th style="width: 25%; padding: 5px;">COMPANY/GOVERNMENT</th> </tr> </thead> <tbody> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> </tbody> </table>			NAME	POSITION	COMPANY/GOVERNMENT																					
NAME	POSITION	COMPANY/GOVERNMENT																									
PROCEDURE COMPLIANCE	IDENTIFY FULL COMPLIANCE WITH PROCEDURES IDENTIFIED AT PREPARATORY. COORDINATE PLANS, SPECIFICATIONS, AND SUBMITTALS. COMMENTS: _____ _____ _____																										
PRELIMINARY WORK	ENSURE PRELIMINARY WORK IS COMPLETE AND CORRECT. IF NOT, WHAT ACTION IS TAKEN? _____ _____ _____ _____																										
WORKMANSHIP	ESTABLISH LEVEL OF WORKMANSHIP. WHERE IS WORK LOCATED? _____ _____ IS SAMPLE PANEL REQUIRED? YES <input type="checkbox"/> NO <input type="checkbox"/> WILL THE INITIAL WORK BE CONSIDERED AS A SAMPLE? YES <input type="checkbox"/> NO <input type="checkbox"/> (IF YES, MAINTAIN IN PRESENT CONDITION AS LONG AS POSSIBLE AND DESCRIBE LOCATION OF SAMPLE) _____ _____																										
RESOLUTION	RESOLVE ANY DIFFERENCES. COMMENTS: _____ _____ _____																										
CHECK SAFETY	REVIEW JOB CONDITIONS USING EM 385-1-1 AND JOB HAZARD ANALYSIS COMMENTS: _____ _____ _____ _____																										
OTHER	OTHER ITEMS OR REMARKS _____ _____																										
<div style="display: flex; justify-content: space-between;"> QC MANAGER _____ DATE _____ </div>																											

FOLLOW-UP PHASE CHECKLIST

Date

Report No.

Contract No.: N68711-98D-5713, CTO No. 0040

Contract Title: CERCLA TCRA IR Site 25, Alameda Point,
Alameda, CA

Project Name/Number

Item/Activity Inspected

Drawing Reference	Rev.	Drawing Reference			Rev.
Inspection Attribute		Specification Reference	Acceptance Criteria	Inspection Result	Accept/Reject

Requests For Information Issued/Subject

Reference No.

FCRs Issued/Subject

Reference No.

Nonconformances Issued/Subject

Reference No.

Reinspection Required

Yes

No

Comments

QC MANAGER

DATE

REWORK ITEMS LIST

Contract No. N68711-98-D-5713	CTO No. 0040	Project Title and Location CERCLA TCRA IR Site 25, Alameda Point, Alameda, CA	Contractor Foster Wheeler Environmental Corporation
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[illegible]

MATERIALS INSPECTION CHECKLIST

Date

Report No.

Contract No.: N68711-98D-5713, CTO No. 0040

Contract Title: CERCLA TCRA IR Site 25, Alameda Point,
Alameda, CA

Contract Specifications:

Material	Qty	Condition	Testing	Comments

Storage Conditions:

Submittals:

MATERIALS INSPECTION CHECKLIST		Date
		Report No.
Contract No.: N68711-98D-5713, CTO No. 0040		Contract Title: CERCLA TCRA IR Site 25, Alameda Point, Alameda, CA
Contract Specifications:		
Material/Equipment Certifications:		
Preparatory Site Conditions:		
Contract Variance:		
Comments:		
Attendees:		
		QC Representative
		Date
		QCSM
		Date

COMPLETION INSPECTION CHECKLIST

Date

Report No.

Contract No.: N68711-98D-5713, CTO No. 0040

Contract Title: CERCLA TCRA IR Site 25, Alameda Point,
Alameda, CA

Contract Specifications:

Major Definable Features of Work:

A. Open Punchlist Items From Follow-Up Phase Checklist:

	Item	Date of Completion
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

B. New Punchlist Items Noted:

	Item	Date of Completion
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

C. ROICC NOTIFIED?

☐ Yes

☐ No

On behalf of Foster Wheeler Environmental Corporation, I certify this activity is completely in accordance with the Contract Documents, based upon the information available to me.

Project Quality Control Manager

NONCONFORMANCE REPORT

Contract No. N68711-98-D-5713	CTO No. 0040	Nonconformance Report No.
To	Location	Date

RE: Drawing No. _____ Specification Section _____ Other _____ Supplier or Contractor _____ Description of Component, Part or System _____	Title _____ Title _____
--	----------------------------

Description of Nonconformance (items involved, specifications, code or standard to which items do not comply, submit sketch, if applicable):

Name and signature of person reporting nonconformance	Title/Company	Date
---	---------------	------

Recommended Disposition (submit sketch, if applicable):

Name and signature of person reporting nonconformance	Title/Company	Date
---	---------------	------

Evaluation of Disposition by Foster Wheeler Environmental Corporation. Reason of disposition:

Corrective Action
☐ Required ☐ Not Required

Engineering (signature) _____ Date _____ <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted w/comments	Quality Assurance (signature) _____ Date _____ <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted w/comments
Construction (signature) _____ Date _____ <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted w/comments	Other (signature) _____ Date _____ <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted w/comments

Distribution: PJM: Abram Eloskof _____ PQCM: Craig Rice _____ QCM: Mary Schneider _____ Site Superintendent: Jim Baldwin _____ DoN RPM: Rick Weissenborn _____ ROICC: Shirley Ng _____ Subcontractor: _____	Verification of Disposition <input type="checkbox"/> Required <input type="checkbox"/> Not Required By : Signature _____ Title _____ Date _____
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NONCONFORMANCE LOG

Contract No. N68711-98-D-5713	CTO No. 0040	Project Title and Location CERCLA TCRA IR Site 25, Alameda Point, Alameda, CA	Contractor Foster Wheeler Environmental Corporation
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[illegible]

FIELD CHANGE REQUEST FORM

Contract No. N68711-98-D-5713	CTO No. 0040	Field Change Request Form No. FCRF-	
	Location	Date	

RE: Drawing No. _____ Specification Section _____ Other _____	Title _____ Title _____
--	----------------------------

Description (items involved, submit sketch, if applicable):

Reason for Change

Recommended Disposition (submit sketch, if applicable):

☐ Minor change
 ☐ Major change (impacts cost, schedule or technical)

Will this change result in a contract cost or time change ☐ Yes ☐ No
 Estimate of contract cost or time charge (if any) _____

Preparer (signature)	Date	Preparer's Title	Site Superintendent (Signature)	Date
----------------------	------	------------------	---------------------------------	------

Disposition
☐ Not approved (give reason).
☐ Considered minor change – approved per Recommended Disposition – Documents will not formally be revised, field to maintain as-built records.
☐ Considered major change – Design Change Notice Form to be completed.

FWENC Project Engineer (signature) (if engineering related)	Date	FWENC Project Manager (signature)	Date
<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments		<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments	

CIH (signature) (if health and safety related)	Date	Project Scientist (signature) (if science related)	Date
<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments		<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments	

Distribution: _____ Date _____ PjM: Abram Eloskof _____ PQCM: Craig Rice _____ QCM: Mary Schneider _____ Site Superintendent: Jim Baldwin _____ DON RPM: Rick Weissenborn _____ ROICC: Shirley Ng _____ Subcontractor: _____	QC Program Manager (signature) _____ Date _____ <input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments
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DESIGN CHANGE NOTICE FORM

Contract No. N68711-98-D-5713	CTO No. 0040	Design Change Notice Form No. DCNF-
	Location	Date

RE: Drawing No. _____ Specification Section _____ Other _____	Title _____ Title _____
--	----------------------------

Description of Change

☐ Engineering "HOLD" placed on all activities in area defined herein pending receipt of formally revised document(s) and/or DCNF.

☐ Released for construction on basis of modifications prescribed by this DCNF.

Reason for Change <input type="checkbox"/> Field Change Request (FCRF-_____) <input type="checkbox"/> Required Modifications to Drawings or Specifications <input type="checkbox"/> Other _____	Exhibits Attached <input type="checkbox"/> Copies of marked-up area of drawing(s) <input type="checkbox"/> Field Change Request (FCRF-_____) <input type="checkbox"/> Other (describe) _____
---	--

Preparer (signature)	Date	Preparer's Title	Site Superintendent (Signature)	Date
----------------------	------	------------------	---------------------------------	------

Comments

FWENC Project Engineer (signature) (if engineering related)	Date	FWENC Project Manager (Signature)	Date
<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments		<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments	

CIH (Signature) (if health and safety related)	Date	Project Scientist (Signature) (if science related)	Date
<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments		<input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments	

Distribution: PJM: Abram Eloskof _____ PQCM: Craig Rice _____ QCM: Mary Schneider _____ Site Superintendent: Jim Baldwin _____ DON RPM: Rick Weissenborn _____ ROICC: Shirley Ng _____ Subcontractor: _____	QC Program Manager (signature) (if science related) <input type="checkbox"/> Comments (attached) <input type="checkbox"/> No Comments
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PHOTOGRAPH LOG SHEET

Date Submitted

Roll No.

Contract No.: N68711-98D-5713, CTO No. 0040

Contract Title: CERCLA TCRA IR Site 25, Alameda Point,
Alameda, CA

Photographer:

Frame	Date	Time	Location/Grid No.	Description/Work No.	Notes
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REQUEST FOR ENGINEERING INFORMATION (REI)

Contract No. N68711-98-D-5713		CTO No. 0040	REI No.
Project Title and Location CERCLA TCRA IR Site 25, Alameda Point, Alameda, CA		Issue Date	Closure Date
Work Area _____			
Subcontractor _____			
Applicable Plans, Drawings, Specifications _____ _____ _____ _____			
Information Requested _____ _____ _____ _____ _____ _____ _____			
Subcontractor Signature _____		Date _____	
FWENC Requested _____ _____ _____ _____			
Project Engineer Signature _____		Date _____	
Project Manager Signature _____		Date _____	
Distribution:		Date	
PJM:	Abram Eloskof	_____	
PQCM:	Craig Rice	_____	
QCM:	Mary Schneider	_____	
Site Superintendent:	Jim Baldwin	_____	
DON RPM:	Rick Weissenborn	_____	
ROICC:	Shirley Ng	_____	
Subcontractor:	_____	_____	

REQUEST FOR INFORMATION (RFI)

[illegible]

APPENDIX F
TRAFFIC CONTROL PLAN

**Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190**

**CONTRACT No. N68711-98-D-5713
CTO No. 0040**

**APPENDIX F
FINAL
TRAFFIC CONTROL PLAN
Revision 0
November 26, 2001**

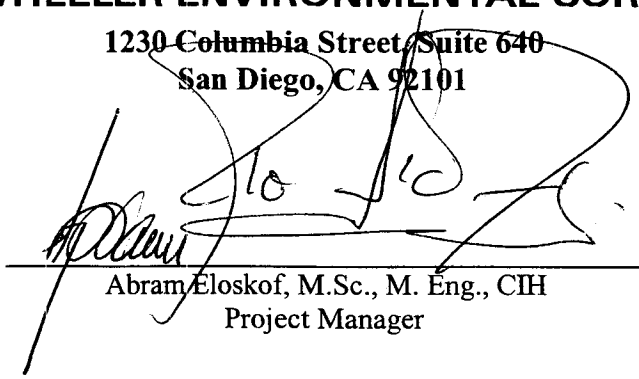
**CERCLA TIME-CRITICAL REMOVAL ACTION
AT INSTALLATION RESTORATION SITE 25
ALAMEDA POINT
ALAMEDA, CALIFORNIA**

DCN: FWSD-RAC-02-0206



FOSTER WHEELER ENVIRONMENTAL CORPORATION

**1230 Columbia Street, Suite 640
San Diego, CA 92101**



**Abram Eloskof, M.Sc., M. Eng., CIH
Project Manager**

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ABBREVIATIONS AND ACRONYMS

COC	chemical of concern
DON	U.S. Department of the Navy
FWENC	Foster Wheeler Environmental Corporation
IR	Installation Restoration
PAH	polynuclear aromatic hydrocarbon
TCRA	time-critical removal action

1.0 INTRODUCTION

This Traffic Control Plan addresses project-specific information for vehicular traffic control relating to the remediation activities during the time-critical removal action (TCRA) at Operable Unit-5 [synonymous with Installation Restoration (IR) Site 25] located on Alameda Point, Alameda, California. The Traffic Control Plan discusses the location of major points of ingress and egress at the site and major on-site and off-site roads that would be utilized by project personnel vehicles for heavy equipment mobilization and demobilization at the site and for material transportation to and from the site. The Traffic Control Plan also discusses traffic routes, major roadways outside and in the vicinity of the site, circulation patterns, and volume/numbers of various vehicles that are expected at the site during specific construction activities.

2.0 SITE DESCRIPTION

The project consists of a TCRA within the limits of IR Site 25, Alameda Point, Alameda, California (see Figure F.2-1, Site Vicinity Map). The purpose of the action is to remove contaminated soil located in IR Site 25. The U.S. Department of the Navy (DON), Southwest Division Naval Facility Engineering Command has retained the services of Foster Wheeler Environmental Corporation (FWENC) as General Contractor to conduct the TCRA at this site.

IR Site 25 is located within the National Priority List-listed portion of the former Naval Air Station Alameda, and is comprised of approximately 42 acres divided into three parcels; Parcel 181 (Coast Guard Housing Area), 182 (Estuary Park), and 183 (Coast Guard Housing Management Office) (see Figure F.2-2, Site Location Map). The TCRA area is approximately 14 acres and is located entirely within Parcel 181. U.S. Coast Guard employees and their families are currently occupying approximately 21 multi-unit housing structures under lease from the DON within the TCRA area.

Previous IR Site 25 investigations have revealed the presence of polynuclear aromatic hydrocarbons (PAHs) in the soil. It is believed that the fill material used to create additional land for Alameda Island was contaminated with PAHs. These PAHs are believed to have originated from historical industrial activities in adjacent areas and are ubiquitous in the fill material.

The proposed TCRA at IR Site 25 will reduce soil contaminant concentrations to acceptable levels and be protective of human health by preventing exposure to the contaminated soil. This will be accomplished through excavation and off-site disposal of the contaminated soil at an appropriate disposal facility. By doing this, the removal action will substantially eliminate the identified pathways of exposure to hazardous substances [the primary chemicals of concern (COCs)] for current and future users of the site. The COCs addressed by the TCRA are the seven carcinogenic PAHs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-c,d)pyrene]. The TCRA at IR Site 25 focuses only on potentially unacceptable human health risk concerns in soils. Groundwater is not included within the scope of this TCRA.

3.0 SCOPE OF WORK

In summary, the scope of work for the project will include excavation and off-site disposal of approximately 51,000 tons of contaminated soils. Following excavation, the TCRA area will be backfilled, compacted, re-graded, and sod will be placed. A closeout report will be prepared to document the TCRA activities conducted at the site.

4.0 TRANSPORTATION/CIRCULATION

4.1 DESCRIPTION OF ENVIRONMENTAL SETTING

U.S. Coast Guard employees and their families are currently occupying approximately 21 multi-unit housing structures within IR Site 25. Traffic volume and circulation at Alameda Point falls under the purview of the City of Alameda Department of Public Works, which periodically analyzes the transportation infrastructure. Alameda Point has existing roadways that lead to the project site. Field personnel assigned to this project will be temporarily working at the site during business hours.

4.2 ANALYSIS OF POTENTIAL IMPACTS

During the approximately 17-week construction fieldwork period, the site will generate an average of 24 one-way passenger vehicle trips per day. Approximately 2,312 one-way commercial truck trips will be required during the entire project. This number includes mobilization and demobilization of heavy equipment (20 loads), transportation and delivery of soil fill material to the site (1,125 loads), off-site transportation of contaminated soil (1,125 loads), and transportation and delivery of sod material to the site (42 loads).

Vehicles will enter the site from C Avenue. To reach the site, from Interstate 880, vehicles will exit the freeway at Broadway and follow signage directing them to Alameda then take Webster Street (CA 260) south and exit onto Mariner Square Loop then make a left onto C Avenue. If a problem exists at the Webster Tube the Site Superintendent will inform the DON and prepare traffic to take an alternate route from Interstate 880 to 29th Avenue south to Lincoln Avenue and make a right turn on to Lincoln Avenue. When they reach Webster Street (CA 260), they would make a right turn and go north to Mariner Square Loop to C Avenue, and make a left onto C Avenue. This route will only be used as a last alternative. The trucks will exit the site using the same route. From Interstate 880, the truck route will depend on the final destination of the waste or product. All weight-restricted highways and city streets will be avoided.

Based on data available from the City of Alameda Department of Public Works, Webster Street (a four-lane street, two lanes each way) is designed to handle 1,600 vehicles per lane per hour. Current usage of Webster Street is 30,000 total vehicles per day or 625 vehicles per hour per lane.

An average of 27 vehicles per day over the life of the project will be associated with the TCRA activities at the facility. Based on the city of Alameda's traffic data, it is estimated that the project will not negatively impact the exiting traffic conditions in the area.

In addition, the schedules for the delivery and transportation of fill and sod material, as well as off-site transportation of contaminated soils to landfills, will be planned to minimize interference

with the normal traffic pattern in the area. Trucks will not enter or exit the site before 7:00 a.m. or after 5:00 p.m. in order to avoid peak traffic flow in the area. Site activities within residential areas will be restricted to the hours between 8:00 a.m. and 5:00 p.m. The majority of the trucks will have capacities greater than 20 tons. The project will require permitted, oversized vehicles for the transportation of heavy and extra-wide construction equipment.

Due to the limited and short duration of construction activities (17 weeks), the impact to transportation or traffic patterns is expected to be insignificant. Heavy construction equipment such as front-end loaders, excavators, backhoes, and other support vehicles will remain at the site for the duration of the field activities after initial mobilization. This equipment will not leave the site until they are no longer needed. Vehicles used for commuting workers will be parked in designated areas within the support zone of the laydown area.

4.3 TRAFFIC SAFETY MEASURES

In order to expedite the passage of facility traffic through or around the work areas and within the site, FWENC will install and maintain necessary signs, lights, temporary railings, barricades, and other facilities for the sole convenience and direction of facility traffic. FWENC will furnish competent flagmen whose duties will be to direct the movement of facility traffic through or around the work area.

Convenient access to driveways and homes around the work area will be maintained during the construction activities.

Water and dust abatement measures will be applied to the on-site access roads that will be utilized by construction vehicles for alleviation or prevention of dust nuisance.

If the construction operations create potential hazardous conditions to traffic or residential personnel, FWENC will furnish, erect, and maintain the necessary measures such as fences, temporary railing, barricades, lights, signs, and other devices, and take such other protective measures as necessary to prevent accidents or damage or injury to residential personnel. Flagmen will also be furnished, as necessary, to give adequate warning to traffic or to facility personnel of any dangerous conditions to be encountered.

No material or equipment will be stored where it will interfere with the free and safe passage of residential personnel. At the end of each day's work and at other times when construction operations are suspended for any reason, FWENC will remove all equipment and other obstructions from that portion of the roadway used by residential traffic. In addition, FWENC will adhere to all speed limit requirements.

4.4 TRAFFIC CONTROL

Traffic controls will be utilized to provide for the efficient completion of the work activities in a safe working environment while minimizing the impact on the normal traffic flow. Traffic controls will be required during removal activities in the excavation and stockpile areas to provide for equipment operation and truck loading for off-site transportation. Traffic controls will also be required during backfilling and site restoration operations to provide for clean fill and sod unloading and placement activities. Traffic controls will include:

- A flagman who will be assigned during the loading of contaminated soil and delivery of fill and sod (In addition, a flagger will be assigned to each fill material stockpile location to direct the end dumps from the stockpile site to each excavation area.)
- Maintenance of traffic flow at all times during project construction activities on local streets and roads (Figure F.4-1, Traffic Route Map)
- Scheduling of loading of contaminated soil as well as delivery of sod and fill material during off-peak hours to minimize disruption to traffic
- Encouragement of transportation - demand management strategies, such as car/van pool for construction workers
- Scheduling of end dumps delivering material to the site and removing contaminated soil to avoid queuing along streets and roads (Close coordination between FWENC foreman and truck dispatcher will be maintained at all times during loading and unloading activities.)
- Providing sufficient area to park all passenger vehicles on site in the support area and haul trucks in the work zone
- Use of cones, flags, signs, and other traffic control measures, as needed, to facilitate loading and unloading activities

Circulation and flow pattern will consist of accessing the work area via C Avenue and leaving the site via C Avenue. All heavy equipment trucks, such as loaders, dump trucks, and empty trucks for loading and hauling waste soils, will enter the site via C Avenue from Mariner Square Loop. All project personnel will be entering the site via C Avenue. Similarly, access to the site for all mobilization activities will be via C Avenue. Exiting the site for all personnel vehicles and trucks during various activities for site work will be via C Avenue to Mariner Square Drive and enter the Posey Tube and follow signage to the Interstate 880 on-ramp.

In order to prevent congestion of the access road during loading operations and when bringing fill material and sod to the site, no more than three trucks will be allowed to queue along the street. The heavy equipment storage area will be utilized for equipment and vehicular parking during work activities.

All traffic control activities will conform to the applicable specifications of the *Manual of Traffic Control for Construction and Maintenance Work Zones* (California Department of Transportation, 1996) and will be approved by the DON.

On-street parking will be prohibited for all vehicles associated with the construction activities throughout the project area in order to maintain normal access and clear lanes.

During non-construction periods, non-applicable signs will be covered with black plastic or temporarily removed.

Other project-specific measures will be used to minimize the impacts of the proposed construction activities. FWENC will:

- Ensure that proper design geometrics are applied at the access driveways and all internal streets to accommodate trucks and fire apparatus
- Assign specific lane or lanes leading to the site with sufficient spacing for queuing of trucks in order to allow efficient movement of construction-related traffic and expedite the entry and exit of construction vehicles
- Provide adequate turning radii on all areas (for example, loading areas near the clean fill stockpile or contaminated soil stockpiles and so forth)
- Maintain traffic flow at all times on roads and streets during project construction phases
- Provide sufficient area to park all vehicles on site during construction, including parking for haul trucks
- Maintain close coordination between the DON and all other project contractors to ensure safety and minimize impact to other activities within the facility

5.0 REFERENCES

California Department of Transportation. 1996. *Manual of Traffic Control for Construction and Maintenance Work Zones*.

FIGURES

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02020611.DWG

DCN: FWSD-RAC 02-0206

CTO: #0040

APPROVED BY: AE

CHECKED BY: VR

DRAWN BY: MD

REVISION: 0

DATE: 11/16/01

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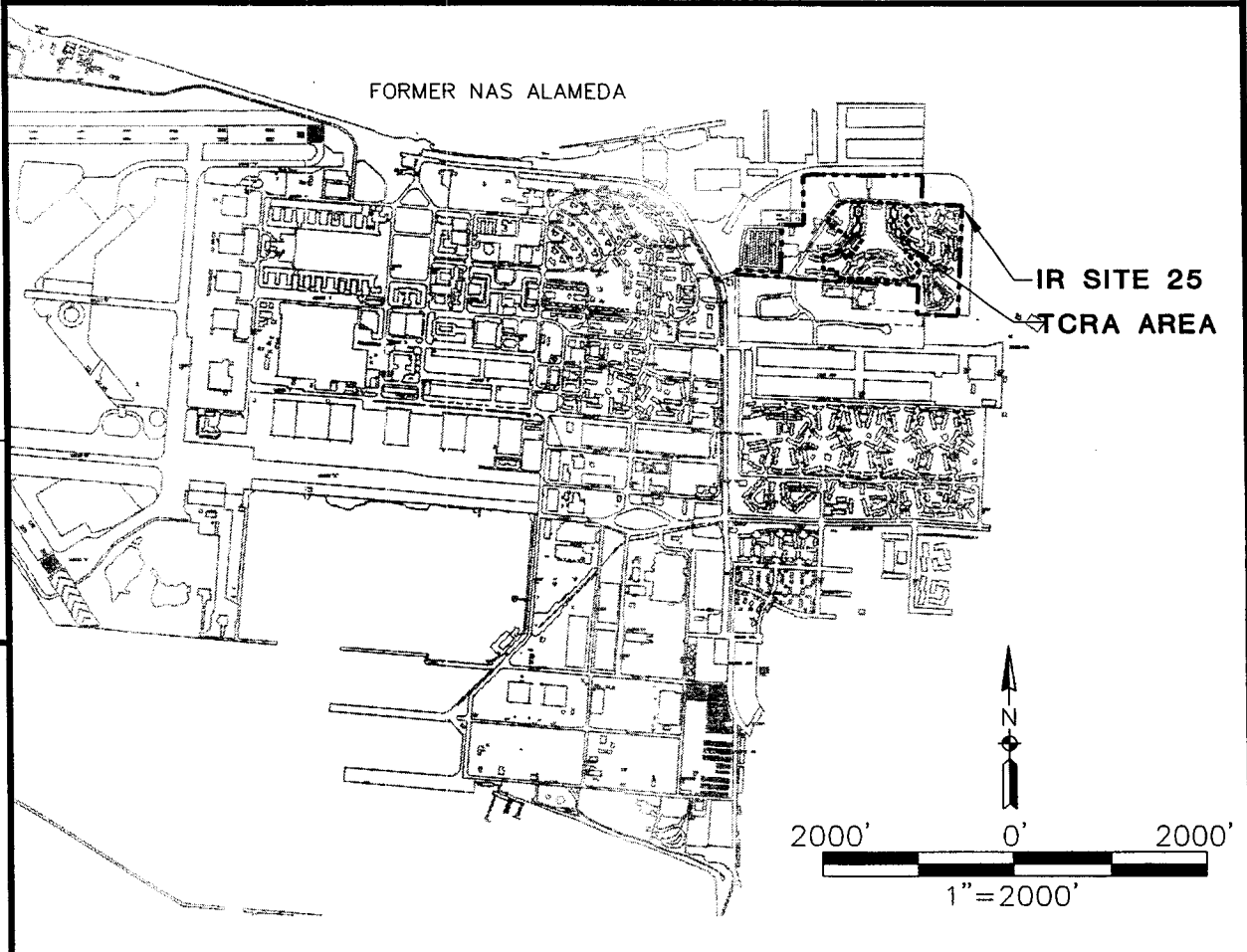
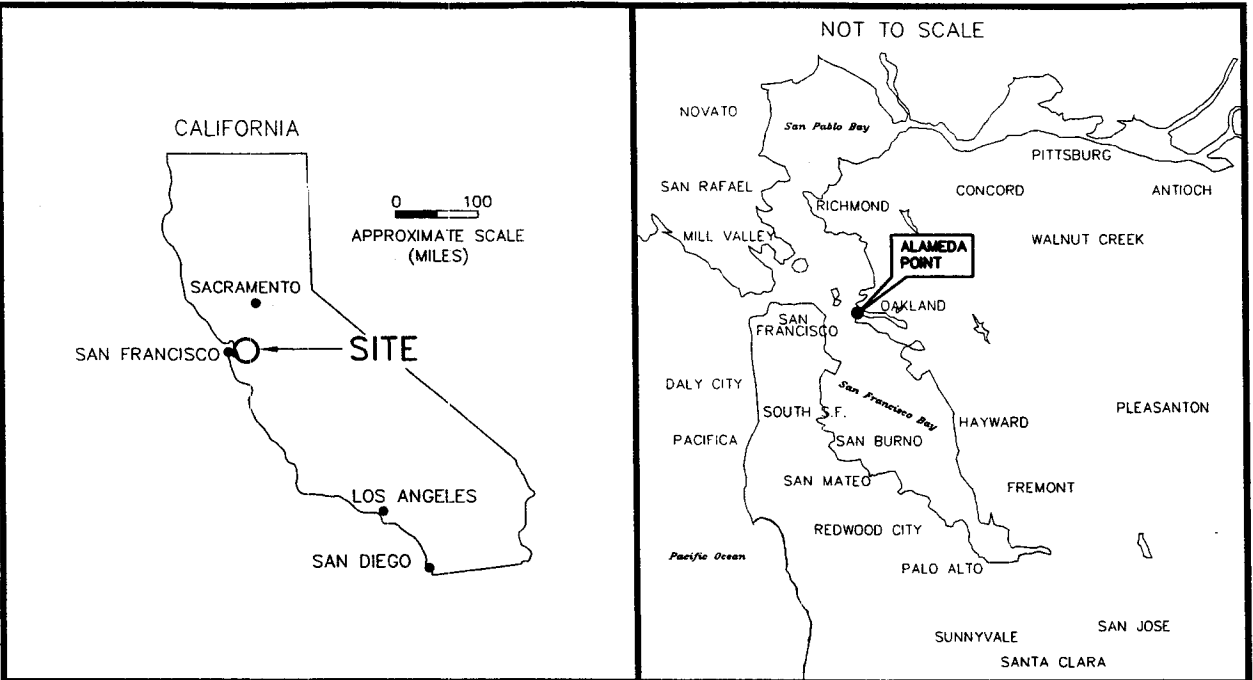


Figure F.2-1
SITE VICINITY MAP

ALAMEDA POINT - IR SITE 25

FOSTER  WHEELER
ENVIRONMENTAL CORPORATION

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CTO #0040

APPROVED BY: AE

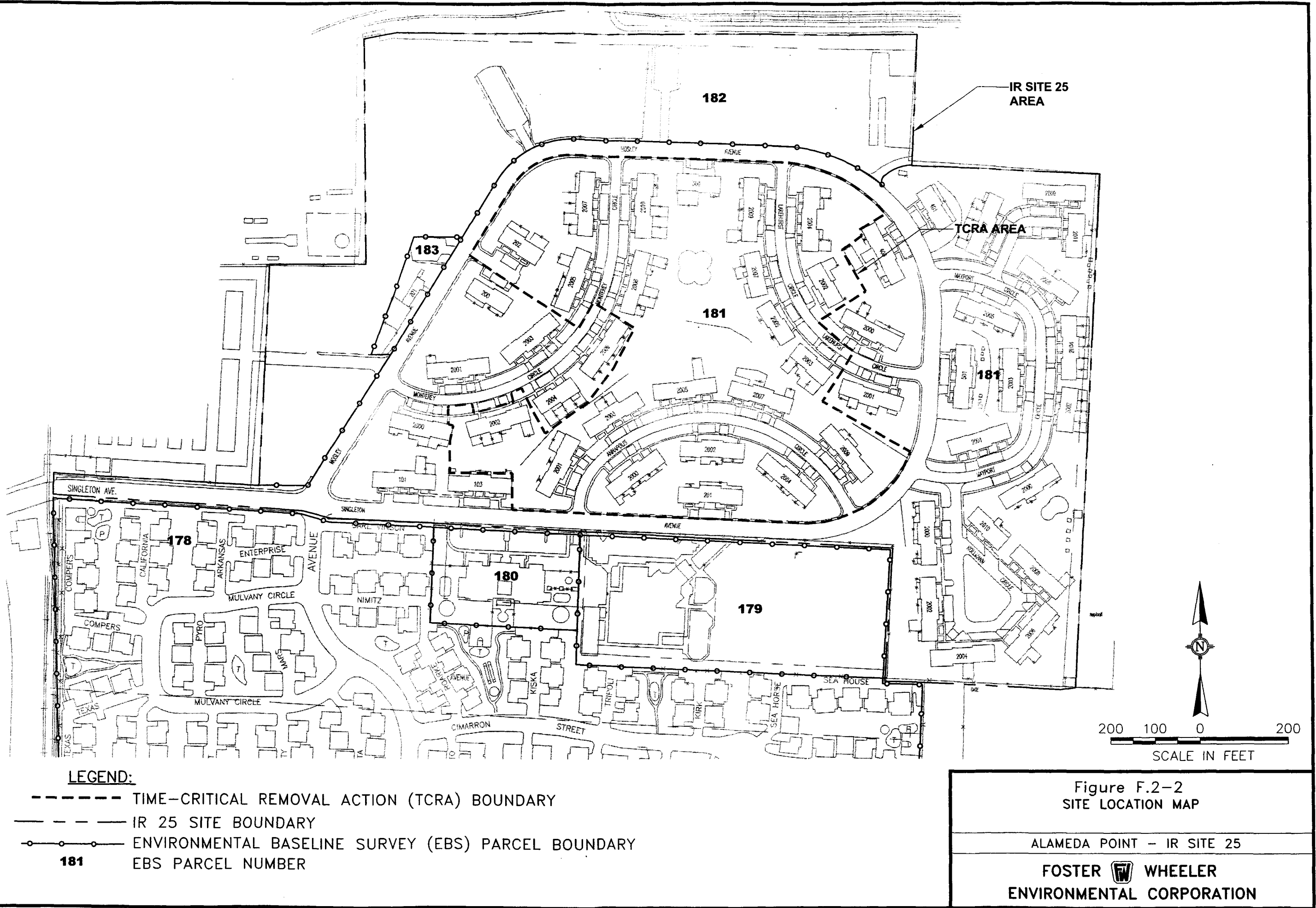
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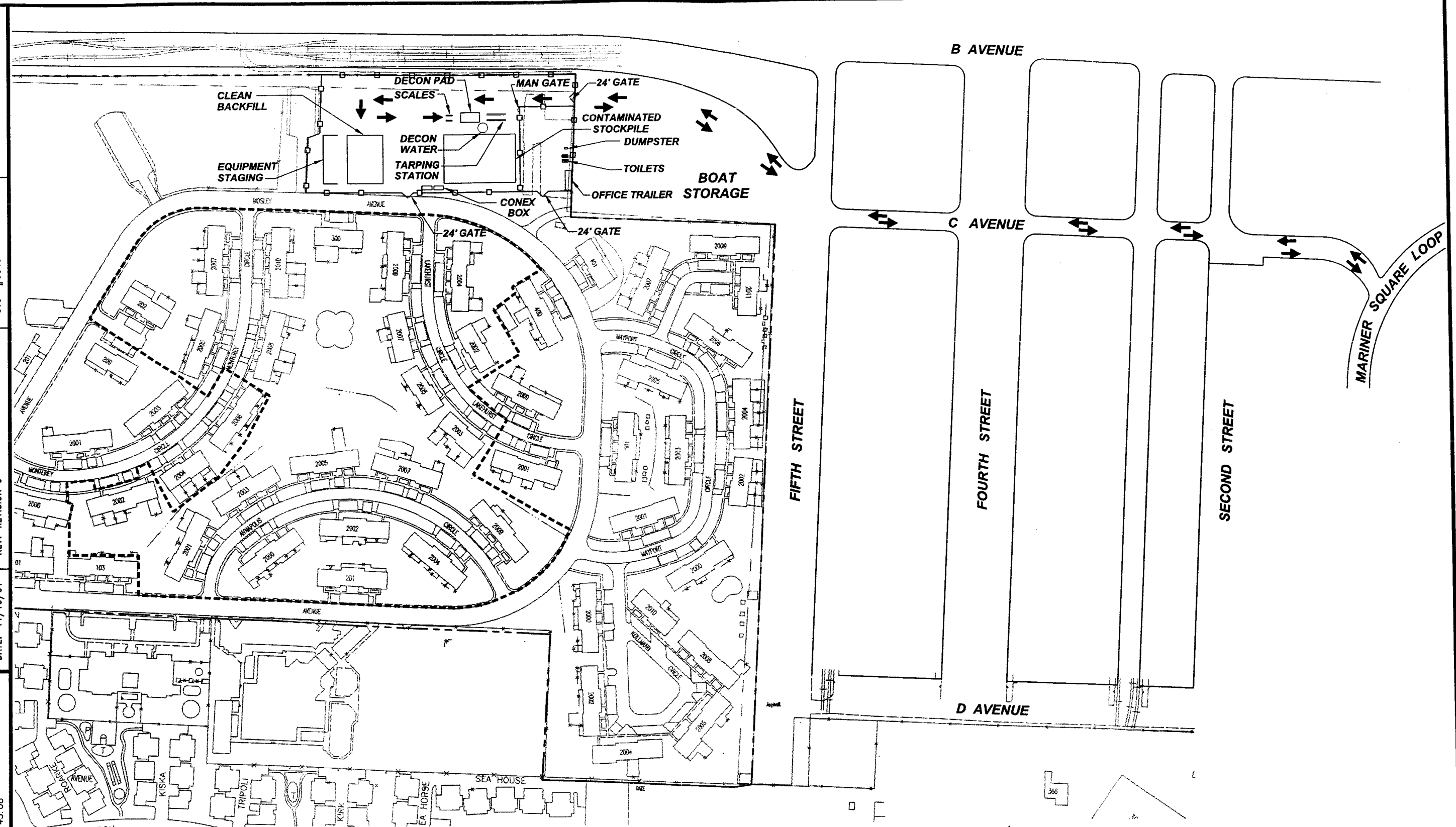
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APPROVED BY: AE	

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LEGEND:

- TEMPORARY FENCE
- - - - - TIME-CRITICAL REMOVAL ACTION (TCRA) BOUNDARY
- - - - - IR 25 SITE BOUNDARY

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Figure F.4-1
TRAFFIC ROUTE MAP

ALAMEDA POINT - IR SITE 25

FOSTER WHEELER
ENVIRONMENTAL CORPORATION

APPENDIX G
WASTE MANAGEMENT PLAN

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-98-D-5713
CTO No. 0040

APPENDIX G
Final
WASTE MANAGEMENT PLAN
Revision 0
November 26, 2001


CERCLA TIME-CRITICAL REMOVAL ACTION AT
INSTALLATION RESTORATION SITE 25
ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RAC-02-0206




FOSTER WHEELER ENVIRONMENTAL CORPORATION

1230 Columbia Street, Suite 640
San Diego, CA 92101



Craig O'Rourke
RAC Compliance Manager



Abram Eloskof, M.Sc., M. Eng., CIH
Project Manager

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ABBREVIATIONS AND ACRONYMS

ARAR	applicable or relevant and appropriate requirement
BMP	Best Management Practice
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DON	Department of the Navy
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
FWENC	Foster Wheeler Environmental Corporation
IR	Installation Restoration
IRP	Installation Restoration Program
LDR	land disposal restriction
NAVSTA	Naval Station
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PAH	polynuclear aromatic hydrocarbon
PjM	Project Manager
PPE	personnel protective equipment
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
TSDF	treatment, storage, and disposal facility
STLC	soluble threshold limit concentration
TCRA	time-critical removal action
TTLC	total threshold limit concentration
WET	waste extraction test
WMP	Waste Management Plan

1.0 PURPOSE

The purpose of the Waste Management Plan (WMP) is to present the waste management practices and procedures to be followed for the types and quantities of waste expected to be generated during the implementation of the time-critical removal action (TCRA) at Operable Unit-5 [synonymous with Installation Restoration (IR) Site 25] at Alameda Point, Alameda, California (formerly Naval Air Station Alameda). The WMP identifies waste management activities conducted during the storage and the preparation and/or disposal of waste (including waste characterization, packaging, storage, and management while in storage). The transportation and disposition of waste materials at appropriate disposal and recycling facilities is also included. It is the responsibility of the Project Manager (PjM) to verify that all project personnel are aware of the requirements stipulated in this plan.

The WMP provides information on how wastes, including potentially hazardous wastes such as excavated soil, personal protective equipment (PPE), debris, and decontamination water associated with project activities will be managed and disposed. In addition, a secondary goal of this plan is to ensure that waste minimization practices are followed, to the extent practical, to reduce the volume of waste that will be generated, stored, and removed from the site for disposal.

The WMP is also a primary component of the Foster Wheeler Environmental Corporation (FWENC) Compliance Program, which includes on-site environmental compliance inspections. The WMP will be revised if the scope of this project or the applicable regulations change.

2.0 REGULATORY FRAMEWORK

Environmental investigation and remediation of Alameda Point is being conducted under the Department of Defense Installation Restoration Program (IRP). Activities conducted under the IRP are to be performed in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Under Executive Order 12580, the Department of the Navy (DON) is the lead agency responsible for the cleanup effort, but the U.S. Environmental Protection Agency (EPA), California Environmental Protection Agency, Department of Toxic Substances Control, and the California Regional Water Quality Control Board are involved in IRP oversight. A Remedial Investigation/Feasibility Study (RI/FS) report is currently being prepared by the DON. This TCRA is being planned based on initial sampling results and findings of the previous investigation activities.

Section 121(d) of the CERCLA of 1980 [CERCLA, 42 United States Code Section 9621(d)], as amended, states that remedial actions at CERCLA sites must attain (or the decision document must justify the waiver of) any federal or more stringent state environmental standards, requirements, criteria, or limitations determined to be legally applicable or relevant and appropriate. Although Section 121 of CERCLA does not itself expressly require that CERCLA removal actions comply with applicable or relevant and appropriate requirements (ARAR), the EPA has promulgated a requirement in the NCP mandating that CERCLA removal actions "... shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws" [Title 40 Code of Federal Regulations (CFR) Section 300.415(j)] {40 CFR Section 300.415(j)}. It is DON policy to follow this requirement. Certain specified waivers may be used for removal actions, as is the case with remedial actions.

3.0 PROJECT WASTE DESCRIPTIONS

Potential waste streams associated with the TCRA activities at IR Site 25 are categorized as follows:

- Contaminated soil [Resource Conservation and Recovery Act (RCRA) hazardous, non-RCRA hazardous, and non-hazardous waste] excavated during the removal action
- Oversized contaminated debris – rock, wood, piping, concrete, tree stumps, and scrap metal
- Wastewater, including impacted stormwater runoff and fluids from equipment and personnel decontamination
- Non-hazardous solid waste, such as trash, empty calibration gas canisters, green waste, and inert construction debris
- Decontamination pad solids/sludges
- Used PPE
- Used polyethylene liners from soil stockpiles and/or waste storage areas

Table G.3-1 presents a matrix summarizing applicable waste characterization, containment, storage, transportation, and disposal requirements for each of the aforementioned waste streams.

4.0 WASTE MANAGEMENT

In accordance with the ARARs for this TCRA, the substantive requirements of the state and federal hazardous waste generation, characterization, storage, treatment, and management regulations of Title 22, California Code of Regulations (CCR), Sections 66261, 66262, and 66264 and 40 CFR, Parts 261, 262, and 264 are applicable to the management of hazardous wastes generated during the removal action and associated project activities. A summary of the key aspects of the waste management program is provided below.

4.1 WASTE CLASSIFICATION

Federal RCRA hazardous waste determination is necessary to determine whether a waste is subject to RCRA requirements at CCR Title 22, Division 4.5 and other state requirements at CCR Title 23, Division 3, Chapter 15. The first step in the RCRA hazardous waste characterization process is to evaluate contaminated media at the site(s) and determine whether it constitutes a "listed" RCRA waste. The preamble to the NCP states that "...it is often necessary to know the origin of the waste to determine whether it is a listed waste and that, if such documentation is lacking, the lead agency may assume it is not a listed waste" [55 Federal Regulations 8666, 8758 (1990)].

This approach is confirmed in EPA guidance for CERCLA compliance with other laws (EPA, 1988), as follows:

To determine whether a waste is a listed waste under RCRA, it is often necessary to know the source. However, at many Superfund sites, no information exists on the source of wastes. The lead agency should use available site information, manifests, storage records, and vouchers in an effort to ascertain the nature of these contaminants. When this documentation is not available, the lead agency may assume that the wastes are not listed RCRA hazardous wastes, unless further analysis or information becomes available that allows the lead agency to determine that the wastes are listed RCRA hazardous wastes.

RCRA hazardous wastes that have been assigned EPA hazardous waste numbers (or codes) are listed in CCR Title 22, Sections 66261.30–66261.33. The lists include hazardous waste codes beginning with the letters "F," "K," "P," and "U." Knowledge of the exact source of a waste is required for source-specific listed wastes (K waste codes). Some knowledge of the nature or source of the waste is required even for listed wastes from nonspecific sources, such as spent solvents (F waste codes) or commercial chemical products (P and U waste codes). These listed RCRA hazardous wastes are restricted to commercially pure chemicals used in particular processes such as degreasing. P and U wastes cover only unused and unmixed commercial

chemical products, particularly spilled or off-specification products. Not every waste containing a P or U chemical is a hazardous waste. To determine whether a CERCLA action contains a P or U waste, there must be direct evidence of product use. In particular, all the following criteria must be met. The chemicals must be:

- Discarded (as described in 40 CFR Section 261.2(a)(2))
- Either off-specification commercial products or a commercially sold grade
- Not used (soil contaminated with spilled unused wastes is a P or U waste)
- The sole active ingredient in a formulation

Hazardous waste characteristics, as defined in 40 CFR, Sections 261.21–261.24, are commonly referred to as ignitability, corrosivity, reactivity, and toxicity. California environmental health standards for the management of hazardous waste set forth in 22 CCR, Division 4.5 were approved by EPA as a component of the federally authorized California RCRA program. Therefore, the characterization of RCRA waste is based on the state requirements.

The characteristics of ignitability, corrosivity, reactivity, and toxicity are defined in 22 CCR, Sections 66261.21 through 66261.24. According to 22 CCR, Section 66261.24(a)(1)(A), a waste that exhibits the characteristic of toxicity is assigned a hazardous waste code beginning with the letter “D” to wastes that exhibit the characteristic of toxicity; D waste codes are limited to “characteristic” hazardous wastes.

According to 22 CCR, Section 66261.10, waste characteristics can be measured by an available standardized test method or be reasonably classified by generators of waste, based on their knowledge of the waste provided that the waste has already been reliably tested, or if there is documentation of chemicals used.

A waste determined not to be an RCRA hazardous waste may still be considered a state-regulated non-RCRA hazardous waste. The state is broader in scope in its RCRA program in determining hazardous waste. Title 22 CCR, Section 66261.24(a)(2) lists the total threshold limit concentrations (TTLCs) and the soluble threshold limit concentrations (STLCs) for non-RCRA hazardous waste. The state applies its own leaching procedure, waste extraction test (WET) that uses a different acid reagent and has a different dilution factor (tenfold). There are other state requirements that may be broader in scope than federal ARARs for identifying non-RCRA wastes regulated by the state. These may be potential ARARs for wastes not covered under federal ARARs. See additional subsections of 22 CCR, Section 66261.24. A waste is considered hazardous if its total concentrations exceed the TTLCs or if the extract concentrations from the WET exceed the STLCs. A WET is required when the total concentrations exceed the STLC by a factor of 10 but are less than the TTLCs. California also has additional hazardous waste classification criteria (including 96-hour fish bioassays) that may need to be considered on a

case-by-case basis. Wastes determined to be hazardous wastes under California regulations and not under federal regulations are referred to as non-RCRA wastes.

Therefore, unless the area of soil to be excavated is predetermined to be hazardous waste based on existing data, additional representative soil sampling and analysis will be performed to characterize the soil in-place to determine if it is a hazardous waste and to profile it for appropriate disposal options. Based on current analytical data for the area, it is unlikely the soil will be a RCRA hazardous waste, however, there is a potential for the excavated soil to be a non-RCRA hazardous waste due to elevated concentrations of certain constituents [for example, inorganics and polynuclear aromatic hydrocarbons (PAHs)]. Additional representative samples will be analyzed for volatile organic compounds, pesticides, polychlorinated biphenyls, total petroleum hydrocarbons, and metals to supplement the existing PAHs data obtained during the RI. For areas of soil that do not exceed RCRA or non-RCRA hazardous waste thresholds, soil samples from these areas will be used in a 96-hour fish bioassay to confirm that the soil is non-hazardous.

In addition to the excavated soil, the waste classification requirements will also apply to contents from decontamination water generated from daily decontamination activities, collected stormwater, construction debris, and waste oils and fluids generated from the on-site project equipment. Wastewater resulting from stormwater runoff and decontamination water will be collected and contained within a portable aboveground tank. When the tank or container is approximately half-full or at least every 60 days, whichever occurs first, the tank will be sampled to determine proper disposition of the wastewater. PPE and soil stockpile liners will be characterized based on generator knowledge and will be disposed of at an off-site landfill. Debris will also be characterized based on generator knowledge to determine if it is a potential hazardous waste. Waste oil and other fluids generated during equipment maintenance activities will be collected, contained, and sent off site for recycling.

4.2 WASTE ACCUMULATION AND STORAGE

Part 262, 40 CFR and Section 66262, 22 CCR consist of regulations applicable to the generation, storage, management, and accumulation of RCRA and non-RCRA hazardous wastes, respectively. Specific requirements apply to the accumulation time for hazardous wastes on site and to the accumulation and labeling of hazardous wastes. This project may result in the temporary accumulation of hazardous wastes in staging piles, containers, and tanks. These wastes will be managed, accumulated, and inspected in accordance with the regulations.

4.2.1 Soil Stockpiles and Staging Piles

Soil excavated during this project will be stockpiled on lined and bermed stockpile areas prior to off-site disposal. It is anticipated the excavated soil will consist of non-RCRA hazardous and non-hazardous waste due to varying concentrations of PAHs.

While not anticipated, if soil excavated from the area is determined to be RCRA hazardous waste, then the new (effective June 1, 1999) RCRA staging pile regulations of Section 264.554 of 40 CFR may apply. Under the new regulations, a staging pile is an accumulation of solid, non-flowing remediation waste that is not in a containment building and is used only during removal operations for temporary storage at a facility. The waste pile permitting requirements of RCRA can be avoided through proper designation and management of a staging pile for RCRA hazardous wastes, the land disposal restrictions (LDRs), and minimum technology requirements. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. The staging pile regulation also requires:

- The standards and design criteria for the staging pile must facilitate a reliable, effective, and protective remedy and must consider the volume and types of wastes intended for storage, length of operation, potential for release from the unit, potential migration from potential releases, and potential for exposure to human and environmental exposure to potential releases from the unit.
- The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment through the use of liners, covers, run-on/runoff controls, or other means.
- The staging pile must not operate for more than 2 years.
- Within 180 days following the operating term of the staging pile, it must be closed in accordance with Sections 265.258(a) and 265.111 of 40 CFR. Section 265.258(a) requires the owner/operator to remove and decontaminate all waste residues, contaminated containment system components (liners), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste. Section 265.111 requires the owner/operator to close the facility in a manner that minimizes the need for further maintenance, and controls, minimizes, or eliminates, to the extent necessary, to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.
- Designation for the use of the design criteria and the specific closure requirements for a proposed staging pile must be included in the Remedial Action Work Plan and submitted to the "Director" for approval.

For non-RCRA hazardous waste, in accordance with Division 20, Chapter 6.5, Section 25123.3 of the California Health and Safety Code, the material can be stockpiled at the site for up to 90 days without satisfying all substantive requirements of a hazardous waste facility permit provided the following conditions are met:

- The soil does not contain free liquids.
- The waste is accumulated on an impermeable surface (minimum 20-millimeter liner).

- The generator controls against wind dispersion and rain runoff.
- The generator inspects the site weekly and after storms to ensure the erosion controls are working properly.
- After final off-site transportation, the accumulation site is inspected and remediated as necessary.
- The site is certified for compliance with these standards by a registered engineer.

A log of all soil and debris stockpiles (or staging piles) will be maintained and updated on a daily basis. The log will include date of accumulation, date of sampling, analytical results obtained or pending, hazardous or non-hazardous designation, and so forth.

In addition to the aforementioned requirements, the State Water Resources Control Board Policy Number 92-08, which pertains to the control of stormwater discharges from construction activities, may also be relevant and appropriate to the temporary storage of stockpiled materials. Appropriate Best Management Practices (BMPs) will be implemented to protect stockpiles from erosion and from stormwater run-on and runoff. These BMPs include erosion control, stormwater drainage control, secondary containment, fugitive emissions and wind dispersion control, and spill prevention. A Stormwater Management Plan has been prepared for the project and is included as Appendix K.

4.2.2 Wastewater and Waste Fluids

Section 66264, 22 CCR and Part 264, 40 CFR contain applicable requirements for facilities that store hazardous wastes in tanks or containers for over 90 days. Decontamination water and stormwater that comes in contact with the waste stockpiles will be collected and stored on site in a polyethylene tank of an appropriate capacity. The tank will be installed, managed, and inspected in accordance with the substantive requirements of 22 CCR, Sections 66264.191, 66264.192, 66264.193, and 66264.194. These regulations require specific engineering and design specifications, daily inspections of the tanks, adequate secondary containment (that is, 110 percent of the tank volume plus the maximum rainfall from a 25-year, 24-hour storm event), and closure standards. The contents of the tank will be characterized based on generator knowledge from the project waste streams and/or per the requirements of 22 CCR, 66261 to determine appropriate disposal options. In addition, daily inspections of wastewater tanks will be conducted and logged to ensure the integrity of the tanks and secondary containment is sufficient, to check for leaks or spills, and to ensure labels and markings are in good condition.

When possible, waste fluids generated from heavy equipment maintenance activities will be collected and removed from the site by the maintenance contractor for recycling. If waste fluids are required to be stored on site, they will be labeled accordingly, contained within Department of Transportation (DOT)-approved 55-gallon drums and situated within a pre-designated and properly

designed hazardous waste container storage area. Containers of hazardous wastes containing free liquids have stringent secondary containment requirements. These requirements include:

- A base free of cracks or gaps and sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.
- The base will be sloped or the containment system will be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation. Alternatively, the containers may be elevated on pallets to prevent contact with accumulated liquids.
- The containment system will have sufficient capacity to contain 10 percent of the volume of containers or the volume of the largest container, whichever is greater, plus the maximum rainfall from a 25-year 24-hour storm event.
- Spilled or leaked waste and accumulated precipitation will be removed from the sump or collection area in a timely manner to prevent overflow of the collection system.

4.2.3 Used PPE

Used PPE will be stored in DOT-approved 55-gallon drums within the designated hazardous waste container storage area, which will be designed and managed in accordance with the substantive requirements of the container management regulations codified in 22 CCR, 66264.170 through 66264.178.

4.2.4 Container Labeling

Containers of potentially hazardous waste will be labeled with indelible ink with the following information: source and location, contents and quantity, potential health, safety, and environmental hazards, accumulation start date, date container sampled, parameters analyzed for, and the words "Analysis Pending–Potentially Hazardous." If containers are determined to contain non-hazardous waste they will be labeled accordingly. If containers are determined to contain hazardous waste they will immediately be labeled with a completed "Hazardous Waste" label, which will include:

- EPA Identification Number of the generator [Naval Station (NAVSTA)]
- Name and address of the generator (NAVSTA)
- EPA waste code
- DOT shipping name (prior to off-site shipment)
- Description of contents
- Date of generation (date first drop of waste placed in container)

An inventory of waste containers will be maintained for later submittal to the DON. In addition, weekly inspections of container storage areas will be conducted and logged while wastes remain

in these areas to ensure the integrity of the containers and secondary containment, to check for leaks or spills, and to ensure labels and markings are in good condition.

4.2.5 Waste Accumulation Areas

Hazardous waste storage areas require:

- A sign with the legend, "Danger Hazardous Waste Area—Unauthorized Personnel Keep Out" (written in English and Spanish), will be posted at each 90-day accumulation area and stockpile in sufficient numbers to be seen from any approach. The signs will be legible from a distance of at least 25 feet.
- Aisle space will be maintained to allow the unobstructed movements of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.
- The following emergency equipment will be located or available to personnel during active waste management activities at each accumulation area:
 - A device, such as a telephone or a hand-held two-way radio capable of summoning emergency assistance, will be available.
 - Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment will be available.
 - Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems will be available.
 - A spill response kit for minor spills will be available. The kit will include a shovel, adsorbent pads and/or "kitty litter," and a collection container.

Bulk quantities of fuel, oil, or other hazardous materials will not be stored on site. Equipment fueling and maintenance activities will be performed by an off-site contractor on an as-needed basis.

4.3 WASTE DISPOSAL

Soil excavated during this project, which may include non-RCRA hazardous and non-hazardous wastes, is to be disposed of off site at an appropriately permitted waste disposal facility. Non-soil related wastes, which may include decontamination water, debris, used PPE, used oil, and impacted stormwater, will be managed in accordance with the regulations and transported off site for appropriate recycling or disposal. Each waste stream requiring off-site disposal will be sampled and analyzed, as necessary, to ensure that it is properly characterized and profiled and meets the waste acceptance criteria and packaging requirements for the proposed treatment, storage, and disposal facility (TSDF) prior to transport. Hazardous waste debris generated on site that has been treated using an alternate treatment technology as indicated in 40 CFR, 268.45 and

22 CCR, Section 66268 (decontaminated with a water wash and spray) will be disposed of as non-hazardous solid waste. Used PPE and debris (oversized material, polyethylene liners, polyvinyl chloride piping, and so forth) that is determined to be a hazardous waste and is unsuitable for decontamination, will be sent off site to a hazardous waste landfill facility. Waste oil and other fluids generated during equipment maintenance activities will be collected, contained, and sent off site for recycling.

Waste will be disposed only at a disposal facility approved by the DON and FWENC and permitted for the disposal of the particular type of waste generated. Wastes disposed of off site will be sent to RCRA Subtitle C or RCRA Subtitle D facilities that meet the requirements of 40 CFR, Part 300.440 (CERCLA Off-Site Policy).

4.4 WASTE TRANSPORTATION

FWENC is responsible for shipping hazardous waste off site. Hazardous wastes sent off site for disposal or recycling will be done so in accordance with the DOT Hazardous Material Transportation regulations of 49 CFR, Parts 171-177 and 40 CFR, Part 262, Subpart B and 22 CCR, Section 66262, which involve packaging, placarding, labeling, and manifesting requirements, and with appropriate LDR certification notices per 40 CFR, Part 268 and 22 CCR, Section 66268. Personnel having the required DOT training will perform all DOT functions. In addition, all transporter and disposal contractors will be subject to the FWENC subcontractor qualification process. Under no circumstances will FWENC personnel sign hazardous waste manifests.

Material that does not exhibit one of the nine DOT hazard class characteristics (that is, explosives, gases, flammable/combustible liquids, flammable solids/spontaneously combustible materials/dangerous when wet materials, oxidizers and organic peroxides, toxic materials and infectious substances, radioactive materials, and corrosive materials) is not regulated under DOT rules for hazardous material transportation. If material is suspected to be hazardous, it will be shipped under the appropriate hazard class. All hazardous waste will be transported under DOT hazardous material regulations. Each shipment of a suspected hazardous material will be properly classified using the Hazardous Materials Table in 49 CFR, 172.101. DOT-trained personnel will make all determinations.

4.5 WASTE MINIMIZATION

To minimize the volume of waste, the following general guidelines will be followed:

- Waste materials will not be contaminated unnecessarily.
- Work will be planned ahead.
- Only the materials needed to perform the work activity will be taken into the exclusion zone.

- Materials may be stored in large containers, but the smallest reasonable container will be used to transport the material to the location where it is needed.
- Cleaning and extra sampling supplies will be maintained outside any potentially contaminated area to keep them clean and to minimize additional waste generation.
- Mixing of detergents or decontamination solutions will be performed outside potentially contaminated areas.
- Drop cloths or other absorbent material will be used to contain small spills or leaks.
- Contaminated materials will not be placed with clean materials.
- Wooden pallets inside the exclusion zone will be covered with plastic.
- Material and equipment will be decontaminated and reused when practical.
- Volume reduction techniques will be used when practicable.
- Waste containers will be verified to ensure they are solidly packed to minimize the number of containers.
- Only the size waste containers adequate to contain the volume of waste generated will be used.
- Less hazardous substances will be used whenever possible (that is, only the volume of standard solutions needed for testing will be brought; minimal amounts of decontamination water and solvent rinses will be used).

4.6 WASTE MANAGEMENT INSPECTION AND DOCUMENTATION PROGRAM

This section presents the waste inspection procedures and documentation program to be employed during the project field activities.

4.6.1 Inspections

While all waste accumulation areas will be informally inspected on a daily basis, formal inspections of all container accumulation areas will be conducted and recorded at least weekly in accordance with 40 CFR, 264, Subpart I and 22 CCR, 66264. However, daily inspections will be conducted for tanks containing potentially hazardous wastewater. In addition, soil stockpiles will be inspected daily to ensure liners are in place, the stockpiles are adequately covered, and the covers are anchored sufficiently. The field engineer, designated as the on-site waste coordinator, will conduct inspections. Inspections will be logged in a field notebook, and a weekly (daily for tanks) inspection checklist will be completed. The Project Quality Control Manager or their designee will verify the daily inspections are being done. The container storage area(s) will be inspected to ensure the following:

- Containers are in good condition. If a container is not in good condition or appears to be leaking, the waste will be transferred to another container.

- Containers are made of materials that will not react with, and are otherwise compatible with, the hazardous waste to be stored.
- Containers are closed at all times, except when adding or removing waste.

Tanks used for storage of collected runoff and decontamination water will be inspected on a daily basis and the inspections will be logged. The inspections will ensure tanks have adequate secondary containment, are properly labeled, are in good condition (no apparent structural defects or deterioration) and have no visible leaks.

4.6.2 Documentation

Documentation requirements apply to all waste managed during project activities. Field records will be kept of all waste generation activities. All pages of the field data record log will be signed and dated by the field engineer who is entering the data. In addition, the following information will be recorded in the log:

- Description of waste generating activities
- Location of waste generation (including depth, if applicable)
- Type and volume of waste
- Date and time of generation
- Description of any waste sampling, including:
 - Type of analyses
 - Laboratory name
 - Sampling method
 - Name of sampler
- Name of person recording information
- Name of project superintendent at time of generation

4.6.3 Hazardous Waste Manifests and LDR Certification

All hazardous waste transported from the site will be accompanied by a Hazardous Waste Manifest. DON personnel will be responsible for reviewing and signing all waste documentation, including waste profiles, manifests, and LDR notifications (manifest packages). Prior to signing the manifest, the designated DON official will ensure that pre-transport requirements of packaging, labeling, marking, and placarding are met according to 40 CFR, 262.30–262.33 and 49 CFR Parts 100–178.

The DON will receive one copy of the manifest; the remaining copies will be given to the transporter. The manifest will be returned to the DON's signatory official for the Base's recordkeeping requirements. Copies of all manifests for waste generated at the site will be kept

in a compliance file within the FWENC project files. The PjM will provide the DON with the generator's copies of the manifest.

A LDR form will accompany the shipment of hazardous waste to the TSDF. The TSDF will be notified prior to the waste being sent. The following items must accompany the notification and are included in one of the following facility-specific forms:

- EPA Hazardous Waste Generator identification number for Alameda Point
- Manifest number, including state disposal application number
- Waste analysis data
- Corresponding concentration-based or technology-based treatment standards will be identified if the waste is also a LDR

RCRA recordkeeping requirements, per 40 CFR, 262.20–262.44, will be adhered to, including the retention of signed copies of manifests from the designated facility that received the waste. Additionally, biennial and exception reporting information will be submitted, as necessary, according to 22 CCR, Section 66262.41 and 66261.42 and 40 CFR, 262.41 and 262.42. Additional reporting may be required in accordance with 22 CCR, Section 66262.43 and 40 CFR, 262.43.

4.7 UPDATING THE WASTE MANAGEMENT PLAN

The WMP will be updated as changes in site activities or changes in applicable regulations occur.

5.0 REFERENCES

- U.S. Environmental Protection Agency. 1988. *CERCLA Compliance With Other Laws Manual, Draft Guidance*. EPA/540/G-89/006, Office of Emergency and Remedial Response, Washington, DC. August.

TABLE

TABLE G.3-1

WASTE MANAGEMENT SUMMARY REQUIREMENTS

Waste Types	Characterization Requirements	Containment Requirements	Storage Requirements	Transportation Requirements	Disposal Requirements
Excavated Soil	<p>Unless a waste determination (e.g. RCRA hazardous, non-RCRA hazardous or non-hazardous) can be made based on generator knowledge, stockpiled soil will be sampled in accordance with the Feasibility Sampling Plan.</p> <p>Samples will be run for potential contaminants including: VOCs, SVOCs, pesticides, PCBs total metals analysis and STLC or TCLP.</p>	Contain in stockpiles with underlying 20-millimeter polyethylene liners.	<p>All excavated soil will be stockpiled on liners and will have appropriate erosion, wind, and stormwater run-on and runoff controls. Stockpiles will be identified as hazardous or non-hazardous waste. If hazardous, the stockpiles will be managed in accordance with the staging pile requirements of 40 CFR, Section 264.554.</p> <p>Stockpiles will be covered at the end of each day and when not being actively managed. In addition, stormwater BMPs will be employed.</p>	<p>If material is a hazardous waste, a hazardous waste manifest and DOT vehicle placarding are required. Must use a Cal-EPA permitted transporter. Must also have LDR certifications as necessary. Hazardous waste manifest to be signed by the DON.</p> <p>Individuals involved in overseeing or shipping hazardous materials must meet DOT-training requirements.</p>	<p>The waste will be containerized and sent off site for disposal at an appropriate Class I, II, or III facility, depending on the contaminant matrix.</p> <p>An ESQ Scientist must approve any TSDF and/or transporter prior to shipment of waste.</p>
Used Oil and Oil Filters	<p>Spent oil filters and oil will be handled as a Specified California Hazardous Waste.</p> <p>"Drained" oil filters may be managed as a non-hazardous solid waste. Recycling of the "empty" filters is the preferred method for removal of this material from site.</p>	<p>Used oil to be stored in 55-gallon containers.</p> <p>"Drained" oil filters to be placed into plastic bags. Filters to be drained and stored within the secondary containment area.</p>	<p>Used oil to be stored in 55-gallon drums labeled "USED OIL/HAZARDOUS WASTE" and located within a secondary containment unit.</p> <p>Spent oil filters will be completely drained and placed into plastic bags before being placed into non-hazardous solid waste dumpsters or retained for recycling.</p> <p>A contracted waste oil recycler shall pick up used oil within 90 days of placement of first drop of oil.</p>	<p>Hazardous waste manifest required. Hazardous waste manifest to be signed by the DON.</p>	<p>Contracted Recycler to pickup and recycle used oil and empty filters.</p> <p>Secondary choice would be disposal of the bagged (drained) oil filters at an approved Class III solid waste landfill.</p>

TABLE G.3-1

WASTE MANAGEMENT SUMMARY REQUIREMENTS

Waste Types	Characterization Requirements	Containment Requirements	Storage Requirements	Transportation Requirements	Disposal Requirements
Decontamination Pad Solid Residuals	<p>Unless a waste determination (e.g. RCRA hazardous, non-RCRA hazardous or non-hazardous) can be made based on generator knowledge, the material will be sampled to determine appropriate management and disposal procedures.</p> <p>Samples will be run for potential contaminants including: VOCs, SVOCs, pesticides, PCBs, total metals and STLCL or TCLP.</p>	<p>Residues accumulated in sump in designated decontamination area.</p> <p>Routinely removed and placed in containers.</p>	<p>Unless predetermined to be hazardous or known to be non-hazardous, containers will be marked as follows:</p> <p>POTENTIALLY HAZARDOUS DECON PAD RESIDUALS - ANALYSIS PENDING</p> <p>The storage accumulation clock starts from the date that waste is first put into the container.</p> <p>Containers are to be labeled and stored in pre-designated hazardous waste storage area with secondary containment.</p>	<p>If material is a hazardous waste, a hazardous waste manifest and DOT vehicle placarding are required. Must use a Cal-EPA permitted transporter. Must also have LDR certifications as necessary. Hazardous waste manifest to be signed by the DON.</p> <p>Individuals involved in overseeing or shipping hazardous materials must meet DOT training requirements.</p>	<p>The waste will be containerized and sent off site for disposal at an appropriate treatment, storage, or disposal facility approved under the CERCLA Off-site Rule.</p> <p>An ESQ Scientist must approve any TSDF and/or transporter prior to shipment of waste.</p>
Wastewater (decontamination water, and collected stormwater)	<p>Unless a waste determination (e.g. RCRA hazardous, non-RCRA hazardous or non-hazardous) can be made based on generator knowledge, the material will be sampled to determine appropriate management and disposal procedures.</p> <p>Samples will be run for potential contaminants including: VOCs, SVOCs, pesticides, PCBs, and metals analysis.</p>	<p>DOT-approved 55-gallon (bunghole-type) metal drums (1A1) or aboveground tank.</p>	<p>Ninety-day storage limit applies to tanks and containers containing hazardous waste. Containers and tanks will be marked as HAZARDOUS WASTE and include the accumulation date, composition and physical state of the waste, hazardous properties, and name and address of generator.</p> <p>Containers and tanks will be sealed when not being filled/unloaded. Containers will be elevated to prevent contact with any ponded precipitation and/or liquids.</p> <p>Store in pre-designated hazardous waste storage areas with secondary containment.</p>	<p>If material is a hazardous waste, a hazardous waste manifest and DOT vehicle placarding are required. Must use a Cal-EPA permitted transporter. Must also have LDR certifications as necessary. Hazardous waste manifest to be signed by the DON.</p> <p>Individuals involved in overseeing or shipping hazardous materials must meet DOT training requirements.</p>	<p>The waste will be containerized and sent off site for disposal at an appropriate treatment, storage, or disposal facility approved under the CERCLA Off-site Rule.</p> <p>An ESQ Scientist must approve any TSDF and/or transporter prior to shipment of waste.</p>

TABLE G.3-1

WASTE MANAGEMENT SUMMARY REQUIREMENTS

Waste Types	Characterization Requirements	Containment Requirements	Storage Requirements	Transportation Requirements	Disposal Requirements
Used Fuel and Air Filters	Run total analysis and STLC or TCLP, or use process knowledge to make a waste determination. Spent air and fuel filters (drained) will be handled as non-hazardous solid waste.	Spent air and fuel filters (drained) to be double bagged. Fuel filters to be drained by vendor responsible for vehicle maintenance within a portable secondary containment unit.	Spent fuel filters to be completely drained. All filters are to be placed into plastic bags and placed into non-hazardous solid waste dumpsters.	Contracted solid waste management company to collect trash.	Dispose of air and fuel filters in site dumpsters or roll-off for non-hazardous solid waste and subsequent disposal at an approved Class III landfill.
Construction Debris (rock, concrete, asphalt, and oversized material)	A waste determination (e.g. RCRA hazardous, non-hazardous) will be made based on the classification of the soil, the debris was in contact with, to determine appropriate management and disposal procedures. Debris not having contact with waste or contaminated soil may be characterized as a non-hazardous solid waste.	Hazardous debris moved from point of generation to the decontamination area. Hazardous debris stored in roll-off bins or covered stockpiles.	Decontaminated debris (debris that meets the debris treatment standard and is not contaminated with a listed waste) and non-hazardous debris may be stored in non-hazardous solid waste roll-off bins. Hazardous debris that cannot be decontaminated and does not meet the debris treatment standards will be stored in containers and/or roll-off bins and will be marked as follows: "HAZARDOUS WASTE" and include the accumulation date, composition and physical state of the waste, hazardous properties, and name and address of generator. Containers and/or bins will be sealed/covered when not being loaded/unloaded. Containers will be elevated to prevent contact with any ponded precipitation and/or liquids.	No special transporter requirements for debris determined to be non-hazardous. Contracted solid waste management company to collect material. If material is a hazardous waste, a hazardous waste manifest and DOT vehicle placarding are required. Must use a Cal-EPA permitted transporter. Must also have LDR certifications as necessary. Hazardous waste manifest to be signed by the DON. Individuals involved in overseeing or shipping hazardous materials must meet DOT training requirements.	Non-hazardous debris or debris treated to meet "Alternate Treatment" standards may be disposed off site at an approved Class III solid waste landfill. Hazardous waste will be containerized and sent off site for disposal at an appropriate treatment, storage, or disposal facility approved under the CERCLA Off-site Rule. An ESQ Scientist must approve any TSDF and/or transporter prior to shipment of waste.

TABLE G.3-1

WASTE MANAGEMENT SUMMARY REQUIREMENTS

Waste Types	Characterization Requirements	Containment Requirements	Storage Requirements	Transportation Requirements	Disposal Requirements
Non-hazardous waste (trash, inert construction debris, calibration canisters, clean polyethylene liners, fence, green waste etc.)	Materials generated during the removal action project and not contaminated with any waste or waste residue may be characterized as a non-hazardous solid waste.	Waste to be stored in non-hazardous roll-off bins or stockpiles.	Non-hazardous waste to be stored separate from hazardous waste and labeled accordingly to prevent commingling of hazardous and non-hazardous wastes.	No special transporter requirements for wastes determined to be non-hazardous. Contracted solid waste management company to collect material.	Non-hazardous wastes to be disposed off site at an approved Class III solid waste landfill or approved recycling facility.
Polyethylene Sheeting (contaminated)	Liners used for containing hazardous soil will be presumed to be hazardous.	Liners will be stored in roll-off bins or DOT 55-gallon drums.	Labeling should consist of a completed commercial hazardous waste label. Roll-offs will be marked as " HAZARDOUS WASTE " and include the accumulation date, composition and physical state of the waste, hazardous properties, and name and address of generator. Roll-off bins will be sealed/covered when not being loaded/unloaded. Roll-off bins will be elevated to prevent contact with any ponded precipitation and/or liquids.	If material is a hazardous waste, a hazardous waste manifest and DOT vehicle placarding are required. Must use a Cal-EPA permitted transporter. Must also have LDR certifications as necessary. Hazardous waste manifest to be signed by the DON. Individuals involved in overseeing or shipping hazardous materials must meet DOT training requirements.	The waste will be containerized and sent off site for disposal at an appropriate treatment, storage, or disposal facility approved under the CERCLA Off-site Rule. An ESQ Scientist must approve any TSDF and/or transporter prior to shipment of waste.
Scrap Metal (storm drain covers, etc.)	Unless generator knowledge is sufficient to make a non-hazardous determination, metal debris will be decontaminated in accordance with the hazardous debris treatment standards before it can be managed as scrap metal for recycling.	Segregate scrap metal from other construction debris following decontamination.	Mark roll-off container as: Scrap Metal Intended for Recycling to prevent commingling with hazardous wastes and construction debris.	No special transporter requirements for scrap metal determined to be non-hazardous. Contracted scrap metal recycling company to collect material.	Scrap metal will be sent to an approved scrap metal recycling facility.

TABLE G.3-1

WASTE MANAGEMENT SUMMARY REQUIREMENTS

Waste Types	Characterization Requirements	Containment Requirements	Storage Requirements	Transportation Requirements	Disposal Requirements
PPE	<p>Use process knowledge to make a waste determination.</p> <p>Decontaminated PPE can be managed as a non-hazardous solid waste.</p>	<p>Use double-plastic bags at point of generation to transport to the 90-day accumulation area.</p> <p>DOT-approved 55-gallon metal drums (1A2).</p>	<p>Labeling should consist of a completed commercial hazardous waste label.</p> <p>Containers will be sealed/covered when not being loaded/unloaded. Containers and roll-off bins will be elevated to prevent contact with any ponded precipitation and/or liquids.</p> <p>Store in pre-designated hazardous waste storage areas with secondary containment.</p>	<p>If material is a hazardous waste, a hazardous waste manifest and DOT vehicle placarding are required. Must use a Cal-EPA permitted transporter. Must also have LDR certifications as necessary. Hazardous waste manifest to be signed by the DON.</p> <p>Individuals involved in overseeing or shipping hazardous materials must meet DOT training requirements.</p> <p>Decontaminated PPE may be placed into non-hazardous solid waste roll-off bins to be picked up by contracted solid waste disposal contractor.</p>	<p>Decontaminated PPE may be disposed at an approved Class III solid waste landfill.</p> <p>If a hazardous waste, the PPE will be containerized and sent off site for disposal at an appropriate treatment, storage, or disposal facility approved under the CERCLA Off-site Rule.</p> <p>An ESQ Scientist must approve any TSDF and/or transporter prior to shipment of waste.</p>

TABLE G.3-1

WASTE MANAGEMENT SUMMARY REQUIREMENTS

Waste Types	Characterization Requirements	Containment Requirements	Storage Requirements	Transportation Requirements	Disposal Requirements
Unidentified Waste Streams (i.e. waste streams that may be generated during site activities but have yet to be identified)	<p>Unless a waste determination (e.g. RCRA hazardous, non-RCRA hazardous or non-hazardous) can be made based on generator knowledge, the material will be sampled to determine appropriate management and disposal procedures.</p> <p>Samples will be run for potential contaminants including: VOCs, SVOCs, pesticides, PCBs, total metals analysis and STLC or TCLP.</p>	DOT-approved 55-gallon metal drums (1A1 or 1A2) depending on whether a liquid or solid.	<p>If hazardous waste, labeling should consist of a completed commercial hazardous waste label. Containers will be sealed/covered when not being managed. Containers will be elevated to prevent contact with any ponded precipitation and/or liquids.</p> <p>If a hazardous waste, the storage accumulation clock starts from the date that waste is first put into the container destined for off-site disposal (90-day max. allowed).</p> <p>Store in pre-designated hazardous waste storage areas with secondary containment.</p>	<p>If material is a hazardous waste, a hazardous waste manifest and DOT vehicle placarding are required. Must use a Cal-EPA permitted transporter. Must also have LDR certifications as necessary. Hazardous waste manifest to be signed by the DON.</p> <p>Individuals involved in overseeing or shipping hazardous materials must meet DOT training requirements.</p>	<p>The waste will be containerized and sent off site for disposal at an appropriate treatment, storage, or disposal facility approved under the CERCLA Off-site Rule.</p> <p>An ESQ Scientist must approve any TSDF and/or transporter prior to shipment of waste.</p>

Notes:

BMP – best management practices
 Cal-EPA – California Environmental Protection Agency
 CFR – Code of Federal Regulations
 DOT – Department of Transportation
 ESQ – Environmental Safety and Quality
 LDR – land disposal restriction
 PCB – polychlorinated biphenyl

PPE – personal protective equipment
 RCRA – Resource Conservation and Recovery Act
 STLC – soluble threshold limit concentration
 SVOC – semivolatile organic compound
 TCLP – Toxicity Characteristics Leaching Procedure
 TSDF – treatment, storage, and disposal facility
 VOC – volatile organic compound

APPENDIX H

DEMOLITION PLAN

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-98-D-5713
CTO No. 0042

APPENDIX H
FINAL
DEMOLITION PLAN
Revision 0
November 26, 2001

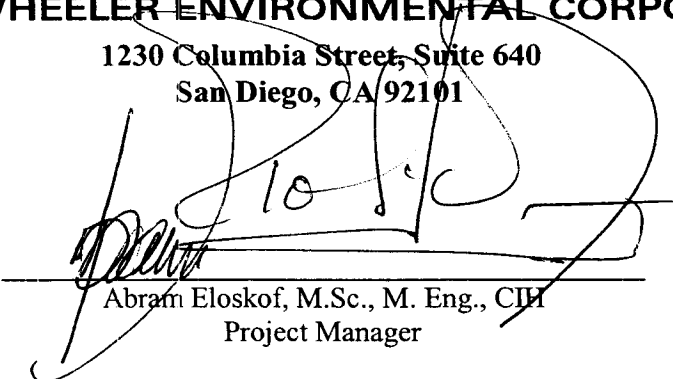
CERCLA TIME-CRITICAL REMOVAL ACTION
AT INSTALLATION RESTORATION SITE 25
ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RAC-02-0206

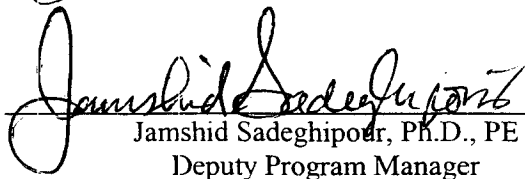


FOSTER WHEELER ENVIRONMENTAL CORPORATION

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ABBREVIATIONS AND ACRONYMS

DON	U.S. Department of the Navy
FWENC	Foster Wheeler Environmental Corporation
IR	Installation Restoration
TCRA	time-critical removal action

1.0 GENERAL INFORMATION

Foster Wheeler Environmental Corporation (FWENC) has prepared this Demolition Plan to address specific issues relevant to the demolition and soil removal procedures that will be implemented during the time-critical removal action (TCRA) activities at Operable Unit-5 [synonymous with Installation Restoration (IR) Site 25]. Detailed descriptions of the site and work are provided in the Remedial Action Work Plan.

1.1 SITE LOCATION

IR Site 25 is located on Alameda Point, Alameda, California, which is on the east side of the San Francisco Bay, adjacent to Highway 880 and the city of Oakland. Refer to Figure H.1-1 for the site vicinity.

The work described in this Demolition Plan will be conducted in the Coast Guard housing area off Main Street contained within a circular drive formed by Singleton and Mosely Avenue.

1.2 OBJECTIVE

The objective of this project is the timely removal of two feet of surficial soil that will occur within the TCRA area identified in Figure H.1-2 of this plan.

1.3 SCHEDULE

Anticipated mobilization is November 1, 2001, and work is anticipated to continue through February 2002. Work hours at IR Site 25 are limited to 8:00 a.m. through 5:00 p.m. Work will not be allowed during the weekend or holidays.

2.0 DUST CONTROL

The spread of dust will be controlled with water application via a water truck. Dust monitoring will be conducted to assure that resident and worker-safety action levels are maintained.

3.0 PROTECTION OF EXISTING FACILITIES

Existing housing units, trees, landscaping, and structures will be protected during removal activities as described in the following sections.

3.1 HOUSING UNITS

The site contains approximately 21 multiple housing units that are occupied by US Coast Guard personnel and their families. Excavation work will occur while occupants are in residence. Excavations will begin at the edge of the structures and move out on a 1.5:1 angle. Prior to excavations, utilities will be marked by a subcontractor and exposed by hand digging. FWENC crews will seal windows with plastic and tape. Barricades will be placed around entrances adjacent to each active work area to prevent inadvertent access by the residents. Each of the units has a front and back door and therefore, residents will still have access to their apartment. The U.S. Department of the Navy (DON) will provide several conex boxes for the residents to store outdoor furniture or play equipment that cannot be relocated inside the homes. Protection of landscape is discussed below.

3.2 TREES

The property surrounding the housing units consists of open space grass areas with trees. Prior to excavation activities, Coast Guard personnel will escort FWENC and identify trees that will be preserved and trees to be removed. Protected trees will have major roots exposed by hand digging and excavations will move out from the edge on a 1.5:1 angle. Caution tape and barricades will also be placed around trees to ensure protection.

3.3 LANDSCAPING

Many of the housing units contain flowered areas. The DON will provide adequate sized pots for the residents to transplant desired vegetation.

3.4 SITE STRUCTURES

The site contains playground equipment at Clover Park that will be protected during construction. The structures and play area will be covered with plastic during the removal process to eliminate cross contamination.

Excavations under structures such as sidewalks, streets, and curbs will not occur and these structures will be protected in place. The maximum anticipated excavation depth will be 2 feet below ground surface; therefore slope stability issues are not anticipated. Storm drain inlets located in grass areas will remain in place. Barricades will be placed around the inlets to prevent damage during the construction activities.

4.0 TEMPORARY FACILITIES

A staging area consisting of a site trailer, imported and contaminated soil stockpiles, and the decontamination area for the work activities is planned in the vacant land area north of Mosely Avenue and south of the railroad tracks. A proposed layout is shown in Figure H.4-1.

5.0 REFUSE STORAGE CONTAINERS

The following refuse and demolition storage containers will be delivered to the site:

- 40-cubic yard open top bins
- 20-cubic yard open top soil bins

Surface and subsurface material and demolition debris will be placed in the storage containers. During working hours, containers will be staged in work areas and will be removed as they are filled. Containers will be moved to the staging area during non-working hours.

In addition to the large containers, a waste disposal company will be subcontracted for the work performance period to make a weekly pickup of a 3-cubic yard bin containing normal office (site trailer) generated refuse.

6.0 WORK ACTIVITIES

The following work activities constitute the majority of work involving demolition.

6.1 FENCE REMOVAL

The excavation boundary is shown on Figure H.1-2. Prior to the excavation work, existing fences separating housing units will be dismantled and placed in 40-cubic yard bins for off-site disposal. This class-III non-hazardous trash debris will be transported to one of the following FWENC-approved landfills:

Altamont Landfill and Resource Recovery Facility
CAD981382732
10840 Altamont Pass Road
Livermore, CA 94550
(925) 455-7301

Keller Canyon Landfill Company
901 Bailey Road
Pittsburg, CA 94565
(925) 458-9800

6.2 SWALE REMOVAL

Concrete drainage swales in the grass areas are scheduled for removal. The concrete will be broken apart and placed in 20-cubic yard open top bins for off-site disposal to one of the above locations.

6.3 ORGANIC MATERIAL (GREEN WASTE)

Organic material (green waste such as designated trees) within the excavation boundary will be removed. This green waste will be stockpiled, mulched, then loaded into trucks and transported to one of the following FWENC-approved local composting/recycling facilities:

Altamont Landfill and Resource Recovery Facility
CAD981382732
10840 Altamont Pass Road
Livermore, CA 94550

Keller Canyon Landfill Company
901 Bailey Road
Pittsburg, CA 94565
(925) 458-9800

6.4 CONTAMINATED SOIL REMOVAL

Contaminated soil removed each day from the work area will be either loaded directly into waste-hauler vehicles or stockpiled in the staging area for later off-site transportation. As described in the Removal Action Work Plan, pre-construction testing will be conducted to characterize the soil for waste disposal purposes. FWENC anticipates that the material will be either non-hazardous or Resource Conservation and Recovery Act non-hazardous. Based on those results, FWENC will determine appropriate disposal sites. One possible location includes the following site:

Altamont Landfill and Resource Recovery Facility
CAD981382732
10840 Altamont Pass Road
Livermore, CA 94550

FIGURES

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02020611.DWG

DCN: FWSD-RAC 02-0206

CTO: #0040

APPROVED BY: AE

CHECKED BY: VR

DRAWN BY: MD

REVISION: 0

DATE: 11/16/01

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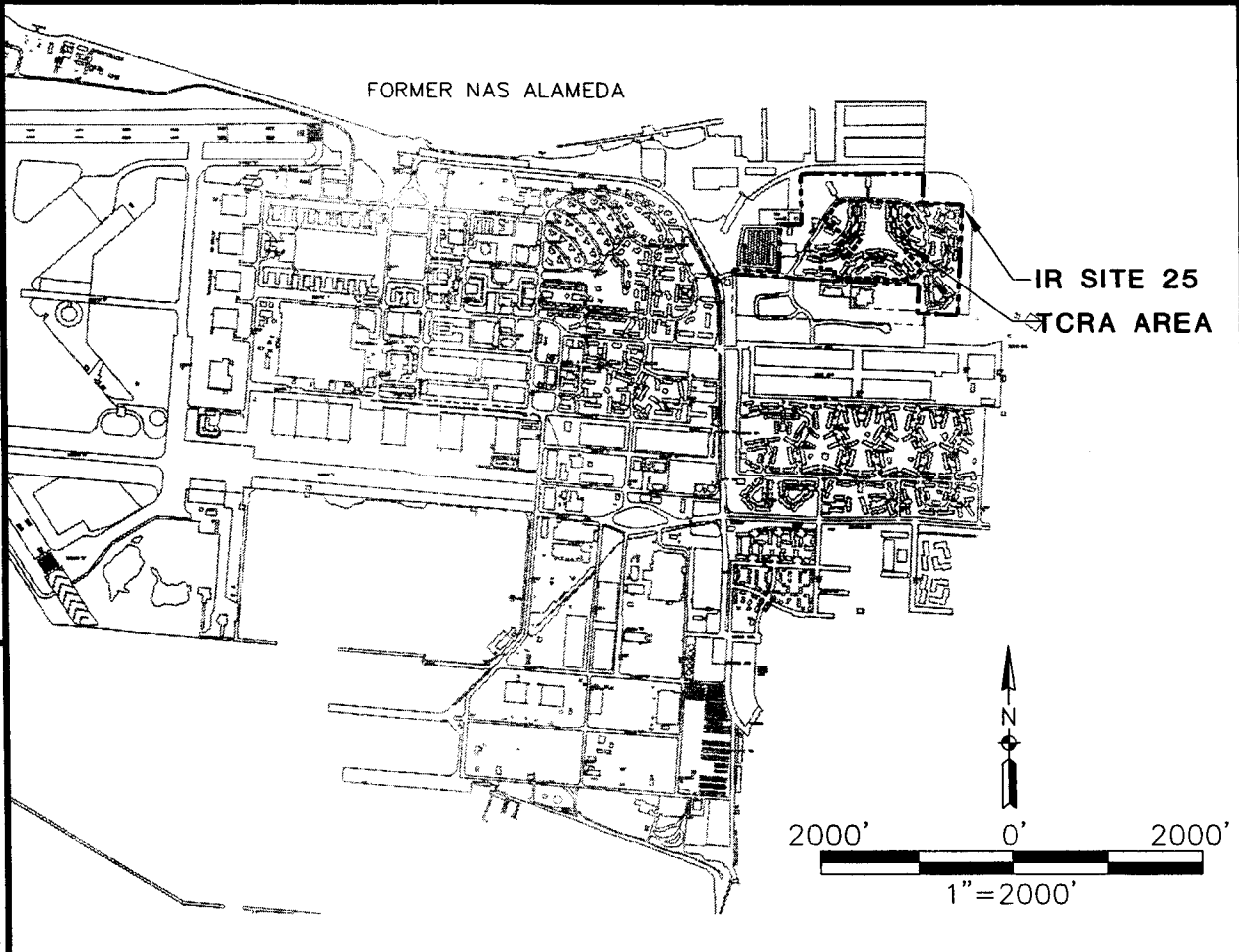
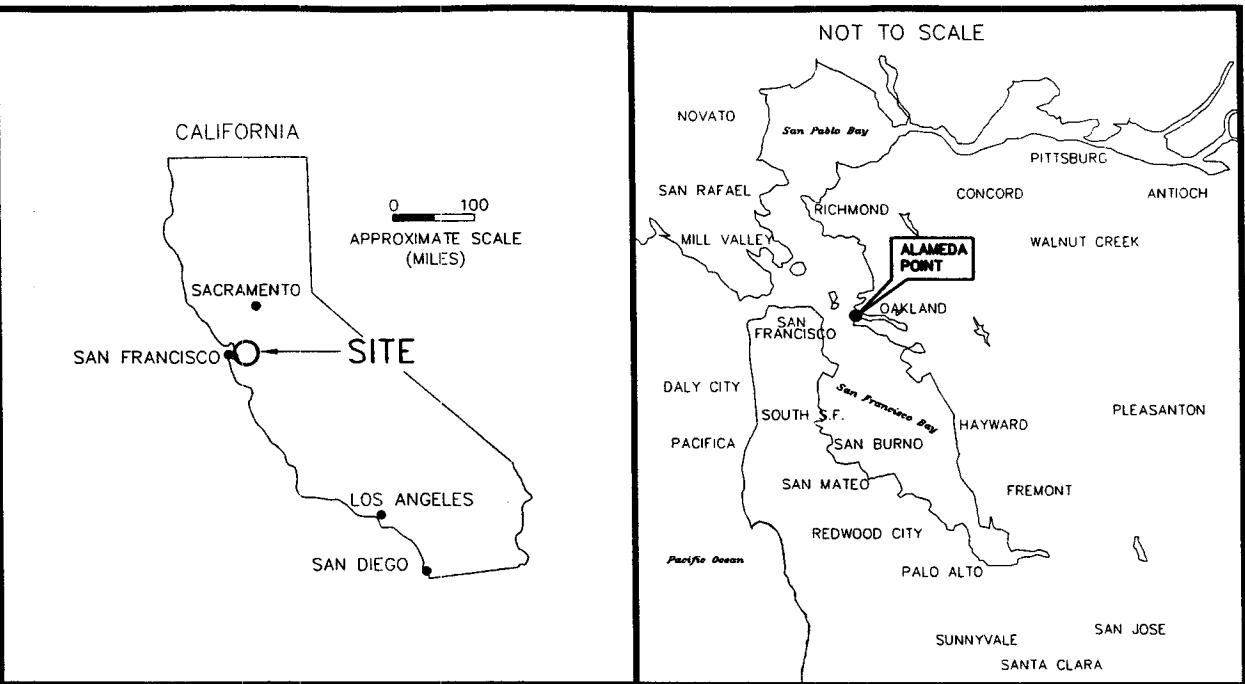


Figure H.1-1
SITE VICINITY MAP

ALAMEDA POINT - IR SITE 25

FOSTER  WHEELER
ENVIRONMENTAL CORPORATION

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LEGEND:
 ■■■■■ TCRA BOUNDARY
 —○— TEMPORARY FENCE

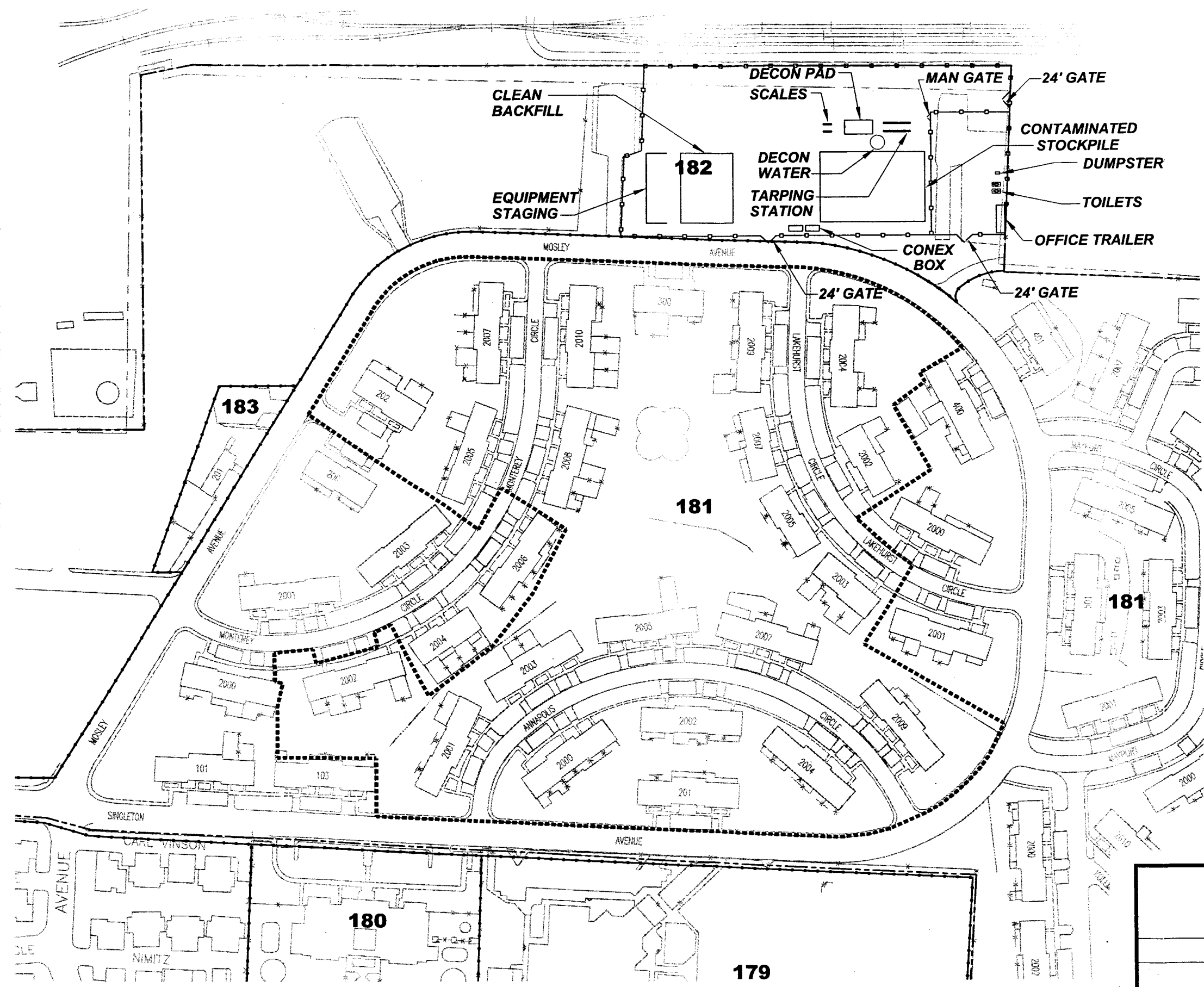


Figure H.4-1
 SITE SUPPORT FACILITIES
 ALAMEDA POINT - IR SITE 25
 FOSTER WHEELER
 ENVIRONMENTAL CORPORATION

APPENDIX I
ENVIRONMENTAL PROTECTION PLAN

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-98-D-5713
CTO No. 0040

APPENDIX I
FINAL
ENVIRONMENTAL PROTECTION PLAN
Revision 0
November 26, 2001

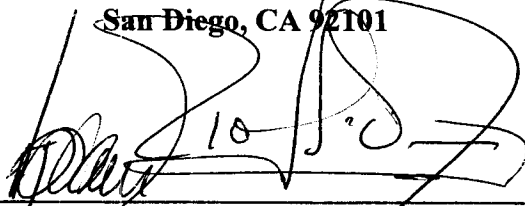
CERCLA TIME-CRITICAL REMOVAL ACTION AT
INSTALLATION RESTORATION SITE 25
ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RAC-02-0206

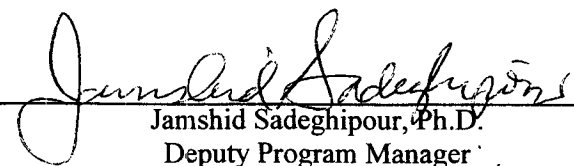


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ABBREVIATIONS AND ACRONYMS

BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DON	Department of the Navy
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
EPP	Environmental Protection Plan
FWENC	Foster Wheeler Environmental Corporation
IR	Installation Restoration
IRP	Installation Restoration Program
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PjM	Project Manager
RPM	Remedial Project Manager
RWQCB	Regional Water Quality Control Board
SHSP	Site-Specific Health and Safety Plan
SWPPP	Stormwater Pollution Prevention Plan
TCRA	time-critical removal action
USC	United States Code
VOC	volatile organic compound
WMP	Waste Management Plan

1.0 ENVIRONMENTAL PROTECTION PLAN

The purpose of this Environmental Protection Plan (EPP) is to provide a program to protect existing environmental conditions and to facilitate the tracking of compliance requirements pertinent to conducting the time-critical removal action (TCRA) at Operable Unit-5 [synonymous with Installation Restoration (IR) Site 25] at Alameda Point, Alameda, California (formerly Naval Air Station Alameda). This EPP details environmental compliance procedures and the specific environmental regulatory, procedural, and training requirements associated with activities to be conducted at the TCRA area. This EPP also establishes the scope of work and schedule necessary to comply with the identified regulatory requirements. It is the responsibility of the Project Manager (PjM) to verify that all project personnel are aware of the compliance requirements stipulated in this section.

If either the scope of this project or applicable regulations change, this section must be revised to reflect the change.

1.1 EXISTING ENVIRONMENTAL CONDITIONS AND IMPACT PATHWAYS

The existing natural resources within the vicinity of the site consist of marine and biological resources, however, due to the disturbed and developed nature of the site, there are no sensitive or critical habitat or biota on the site property. Descriptions of pertinent information about resources in the area of the site are presented below.

1.1.1 Land Resources

The IR Site 25 area is a highly developed area of the Base used exclusively for residential housing and access roads. Historically, this area of the Base was filled with bay dredge sediments.

1.1.2 Surface Waters

The TCRA site is located in the northeast section of the Alameda Point. There are neither surface water bodies within the site boundaries nor immediately adjacent to the site. However, the site is located approximately 500 feet south of the Oakland Inner Harbor which connects to the San Francisco Bay. There are numerous existing beneficial uses of the San Francisco Bay, which are designated in the San Francisco Bay Regional Water Quality Control Board (RWQCB) Basin Plan and include: industrial service supply, navigation, water contact recreation, non-contact water recreation, ocean commercial and sport fishing, saline water habitat, preservation of rare and endangered species, marine habitat, fish migration, and shellfish harvesting (RWQCB, 1995).

1.1.3 Biological Resources/Threatened, Endangered, and Sensitive Species

Much of the land surface of Alameda Point is urbanized and occupied with roads, buildings, parking areas, and materials storage and maintenance areas which are covered with asphalt, concrete, gravel or bare soil. The TCRA area is completely disturbed and consists of residential housing developments with lawns and play areas. Therefore, the area supports few wildlife species. Due to the lack of native habitat and due to the developed and disturbed nature of the area, it is unlikely that the project site is inhabited or utilized by sensitive, threatened, or endangered species.

1.2 REGULATORY FRAMEWORK

Environmental investigation and remediation of Alameda Point is being conducted under the Department of Defense Installation Restoration Program (IRP). Activities conducted under the IRP are to be performed in accordance with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Under Executive Order 12580, the Department of the Navy (DON) is the lead agency responsible for the cleanup effort, but the California Environmental Protection Agency, Department of Toxic Substances Control, and the California RWQCB are involved in IRP oversight. The DON is currently preparing a remedial investigation/feasibility study, and this TCRA is being planned based on initial sampling results and findings of the previous investigation activities.

Section 121(d) of the CERCLA of 1980 [CERCLA, 42 United States Code (USC) Section 9621(d)], as amended, states that remedial actions at CERCLA sites must attain (or the decision document must justify the waiver of) any federal or more stringent state environmental standards, requirements, criteria, or limitations determined to be legally applicable or relevant and appropriate. Although Section 121 of CERCLA does not itself expressly require that CERCLA removal actions comply with applicable or relevant and appropriate requirements, the U.S. Environmental Protection Agency (EPA) has promulgated a requirement in the NCP mandating that CERCLA removal actions “. . . shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws” [Title 40 Code of Federal Regulations (CFR) Section 300.415(j)] [40 CFR Section 300.415(j)]. It is DON policy to follow this requirement. Certain specified waivers may be used for removal actions, as is the case with remedial actions.

1.2.1 Waste Management

The substantive requirements of the state and federal hazardous waste generation, characterization, storage, and management regulations of Title 22, California Code of Regulations, Sections 66261 through 66268 and Title 40, Part 261 through 268 are applicable to the management of

hazardous wastes (for example, excavated soil) generated during the removal action and to other hazardous wastes generated from the project. A comprehensive Waste Management Plan (WMP) has been developed for the project and it is included as Appendix G. The WMP provides detailed information on the types, handling, storage, and disposal of the waste streams anticipated for this project.

1.2.2 Location Standards

1.2.2.1 Coastal Zone

The Coastal Zone Management Act (16 USC, Sections 1451 through 1464) requires that all federal activities that affect the coastal zone shall be conducted in a manner consistent, to the maximum extent practicable, with approved state management programs. California's approved coastal management programs include the San Francisco Bay Plan developed by the San Francisco Bay Conservation and Development Commission. The Bay Plan's policies include limiting bay filling and maintaining marshes and mudflats to the fullest extent possible to conserve wildlife, abate pollution, and protect the beneficial uses of the bay.

Best Management Practices (BMPs) will be utilized for the project to satisfy the substantive requirements of the California Coastal Act of 1976 pertaining to the protection of coastal areas and biological productivity and human health through the prevention of spills of oil and hazardous substances and through effective runoff control. In addition, all project activities with the potential to impact waters of the United States will conform to the substantive requirements of Section 404 of the Clean Water Act and will be reviewed for consistency with the Coastal Zone Management Program of 15 CFR, Part 930. However, since the project is not located within 300 feet of the shoreline of the bay, a coastal zone consistency determination is not required.

1.2.3 Air Emissions

None of the planned TCRA activities are anticipated to result in air emissions that: exceed National Emissions Standards for Hazardous Air Pollutants or National or State Ambient Air Quality Standards, require a Prevention of Significant Deterioration program, or become subject to New Source Performance Standards. However, the substantive requirements of the Bay Area Air Quality Management District Rules and Regulations pertaining to fugitive dust and volatile organic compound (VOC) emissions are applicable to the TCRA activities.

Windblown dust from remediation activities is a potential source of impact to surrounding land uses and the bay. Control measures such as covering stockpiles with polyethylene liners, which are anchored on all sides, wetting construction areas, and avoiding soil disturbance during periods of high wind speed will be utilized to minimize potential fugitive dust impacts. In

addition, while significant VOC emissions are not anticipated, air monitoring equipment and field screening devices will be utilized during project activities.

An Air Emissions Control Plan will be prepared prior to commencement of field operations. Air sampling will be performed using two sampling stations, one within the school, daycare area, and the other within the work area. Both samplers will collect samples of particulate matter in ambient air and polynuclear aromatic hydrocarbons. The results of the air monitoring will help determine when and if corrective measures will be needed to control adverse conditions.

1.2.4 Stormwater Management and Erosion Control

Since the scope of work for this removal action involves construction activities that will disturb more than 5 acres, then substantive aspects of the State Water Resources Control Board General National Pollutant Discharge Elimination System Stormwater Permit for Construction applies. The permit requires a Stormwater Management Plan (SWMP), which describes the BMPs [as described in the *California Stormwater Best Management Practice Handbook* (Camp Dresser & McKee, 1993)] that will be utilized throughout the project. The SWMP will address temporary erosion measures that will be implemented in all areas where potential runoff and subsequent soil transport may occur. Such areas include locations where the soil is exposed, soil stockpile areas, and open excavation or grading areas.

Erosion control measures will be maintained as needed throughout the project. Erosion control measures will include appropriate BMPs such as the use of silt fences, berms, plastic covers, surface mesh, and/or sandbags. Stormwater runoff patterns in relatively flat terrain are difficult to predict, so the locations of specific control measures will be evaluated on a regular basis in accordance with the planned construction activities for the specific area. In addition, localized erosion control measures will be implemented as necessary while work is being performed. Temporary ditches, swales, and other drainage features and equipment will be used to minimize surface water impacts to the surrounding areas and to the San Francisco Bay.

1.2.5 Plant and Wildlife Protection

Various federal statutes and regulations have been promulgated to protect and preserve plant and animal species, including the Environmental Site Assessment (16 USC 1531 et seq.), and the Marine Mammal Protection Act (16 USC 1361-1421h). In addition, various federal statutes and regulations (Fish and Wildlife Coordination Act of 1934, U.S. Fish and Wildlife Conservation Act of 1980) also require consultation with the U.S. Fish and Wildlife Service on issues related to critical wildlife habitat. Due to the lack of native habitat and the developed uses of the area, sensitive species are not known to forage, inhabit, or occur in the project area. Nevertheless, the selected remedial action will reduce contaminants of concern in the surface soils and thus reduce potential exposure by coastal fauna to contaminants through erosion. By reducing contamination in the area, contaminants will be less bioavailable to food chains through flora as well.

1.2.6 Other Considerations

TCRA activities will not require utility services (water, electricity, sewage, and so forth) beyond the available capacity of existing utility systems. Portable generators, water trucks, and temporary sanitary services will be provided as required.

Bulk quantities of fuel, oil, or other hazardous materials will not be stored on site. Equipment fueling and maintenance activities will be performed by an off-site contractor on an as-needed basis.

1.3 RELEASE RESPONSE AND REPORTING

1.3.1 Spill Prevention

Any waste generated during construction activities will be managed according to provisions established in the WMP. Secondary containment will be utilized around all hazardous waste storage areas and liquid hazardous substance storage areas to contain spills and releases should they occur. Secondary containment will include lined, bermed areas constructed of polyethylene sheeting. Secondary containment will be inspected and maintained to ensure the integrity of the containment system. In addition, to prevent, minimize, and cleanup oil and/or fluid leaks from construction equipment, all vehicles will be inspected and properly repaired on a daily basis. Equipment leaks will be addressed immediately or the equipment will be removed from the site. Sufficient quantities of drip pans and other spill control materials (absorbent pads, booms, materials, and so forth) will be stored on site in readily accessible locations.

1.3.2 Spill Response

An emergency response section is included as a part of the Site-Specific Health and Safety Plan (SHSP). The SHSP is designed to prevent the spread of contaminants to adjacent, populated areas and to delineate contingency procedures to be used in the event of injuries to employees or other site-related accidents. Off-site contamination could occur as a result of an accidental release of contaminated materials. The emergency response includes the procedures to be used to mitigate the harmful effects of such a release as well as rescue and first aid services to be rendered.

A spill control plan outlining methods, means, and facilities required to prevent contamination is also contained in the SHSP. At least one spill response kit will be maintained in the work area at all times while work is in progress.

1.3.3 Spill Reporting

The following steps describe the chain of communications to be followed to evaluate reporting requirements if a significant spill of any hazardous substance occurs. Site personnel involved in

the spill will immediately contact at least one of the following Project Team personnel: PjM or Site Health and Safety Specialist.

The personnel, as mentioned above, will contact the DON Remedial Project Manager (RPM) representative. In addition, the Project Team personnel will also notify the following individuals as appropriate.

Environmental Safety and Quality Manager	Jayne Fitzgerald Foster Wheeler Environmental Corporation (FWENC) (949) 756-7534
Project Environmental Health and Safety Manager	Roger Margotto FWENC (619) 234-8696, ext. 203

If a release of a hazardous substance could threaten human health or the environment or if it exceeds a reportable quantity, the PjM will recommend that the DON RPM notify the following:

Local Emergency Response Coordinator:	911
California Office of Emergency Services:	(800) 852-7550
National Response Center:	(800) 424-8802

The report, to be made by the DON RPM immediately upon knowledge, but no later than 24 hours, will indicate:

1. Name, address, and EPA identification number, if applicable, of the generator
2. Date, time, and type of incident
3. Quantity and type of hazardous waste involved
4. Extent of injuries, if any
5. Quantity and disposition of any recovered materials

A written report from the DON RPM may also be required within 5 days. Further details for spill reporting are available in the SHSP (Appendix C).

1.4 TRAINING REQUIREMENTS FOR PROJECT PERSONNEL

1.4.1 Federal Requirements

Site personnel performing field activities must have Occupational Safety and Health Administration 40-hour training for hazardous waste site operations and the required annual 8-hour refresher training (if applicable).

Site personnel performing Department of Transportation (DOT) functions (including selecting packaging or containers, packaging, marking, labeling, preparing shipping papers, and loading)

must be trained in accordance with the requirements of 49 CFR, 171-177. Subcontractors performing DOT functions must provide proof of training.

1.4.2 Client Requirements

Neither additional DON requirements nor training requirements are applicable to this project.

1.5 INSPECTION AND AUDIT PROCEDURES

1.5.1 Inspection by Regulatory Agencies

The PjM has been designated as the Inspection Coordinator for this contract task order. Inspections by FWENC will be conducted in accordance with the procedures established under FWENC EHS 1-10. This procedure pertains to what FWENC employees must follow in an event of an inspection by the regulatory agencies.

1.5.2 Inspection By Third Parties

Any outside party requesting access to inspect the site must be referred to the DON RPM for access authorization. FWENC Project Team personnel or their subcontractors will not grant site access or answer questions from unauthorized personnel. Notify the PjM and the DON RPM of any attempts to gain access to the site.

1.6 UPDATING THE ENVIRONMENTAL PROTECTION PLAN

The EPP section will be amended as changes in site activities or changes in applicable regulations occur.

2.0 REFERENCES

Regional Water Quality Control Board. 1995. *Water Quality Control Plan San Francisco Bay Region*. June.

Camp Dresser & McKee, 1993. *California Stormwater Best Management Practice Handbook – Construction Activity*.

APPENDIX J

ENVIRONMENTAL CONDITIONS REPORT

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-98-D-5713
CTO No. 0040

APPENDIX J
FINAL
ENVIRONMENTAL CONDITIONS REPORT
Revision 0
November 26, 2001

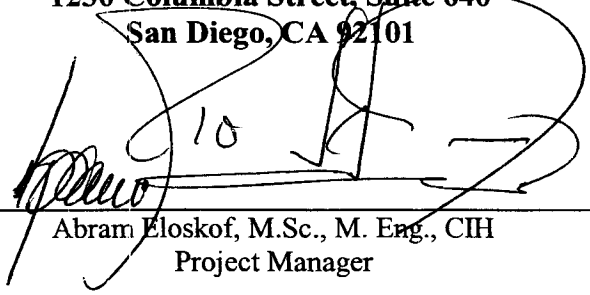
CERCLA TIME-CRITICAL REMOVAL ACTION
AT INSTALLATION RESTORATION SITE 25
ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RAC-02-0206

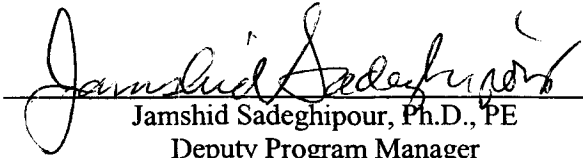


FOSTER WHEELER ENVIRONMENTAL CORPORATION

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Project Manager



Jamshid Sadeghipour, Ph.D., PE
Deputy Program Manager

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Attachment 1 Photo Log

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Figure J.1-1	Photo Locations
Figure J.1-2	Site Vicinity Map
Figure J.1-3	Site Location Map

ABBREVIATIONS AND ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
IR	Installation Restoration
TCRA	time-critical removal action

1.0 ENVIRONMENTAL CONDITIONS REPORT

1.1 PURPOSE AND OBJECTIVE

The purpose of this Environmental Conditions Report is to document physical conditions at Operable Unit-5 [synonymous with Installation Restoration (IR) Site 25] area at Alameda Point, Alameda, California, prior to commencement of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) time-critical removal action (TCRA) activities. This document describes existing environmental conditions and physical features of the area as noted during a site visit on October 4, 2001, by Mr. Craig O'Rourke, a Principal Scientist from Foster Wheeler Environmental Corporation's Santa Ana, California, office. Photographs of the various features and the general condition of the site and the surrounding areas are provided within a photograph log (Attachment 1), and the locations where these photos were taken are shown on Figure J.1-1, Photo Locations.

1.2 SITE LOCATION

The TCRA area is located in the northeast portion of Alameda Point, formerly Naval Air Station (NAS) Alameda (Figure J.1-2, Site Vicinity Map). The 10-acre site is located within a moderately developed residential area consisting of multi-tenant military housing units. The site is bordered by Singleton Avenue to the south and east and by Mosley Avenue to the west and to the north. A maintenance building for housing and park maintenance workers is located across Mosley Avenue to the west. Park areas are located to the northwest and to the north, and the Alameda-Oakland Inner Harbor is located beyond the park to the north. A large utility yard and a sewage pump station are located across Mosley Avenue to the northeast. Residential housing areas also lie to the northeast and to the east of the site. A day care center and elementary school are located across Singleton Avenue to the south of the site. During the site visit, the wind was blowing from west to east.

1.3 TCRA AREA

The area targeted for the TCRA soil excavation activities consists of grass common areas, backyards, child play areas, and front yards for approximately 21 separate multi-tenant housing complexes situated along three semicircular streets within the area (Figure J.1-3, Site Location Map). The housing complex was built in the 1960s to support the NAS Alameda employees and their families.

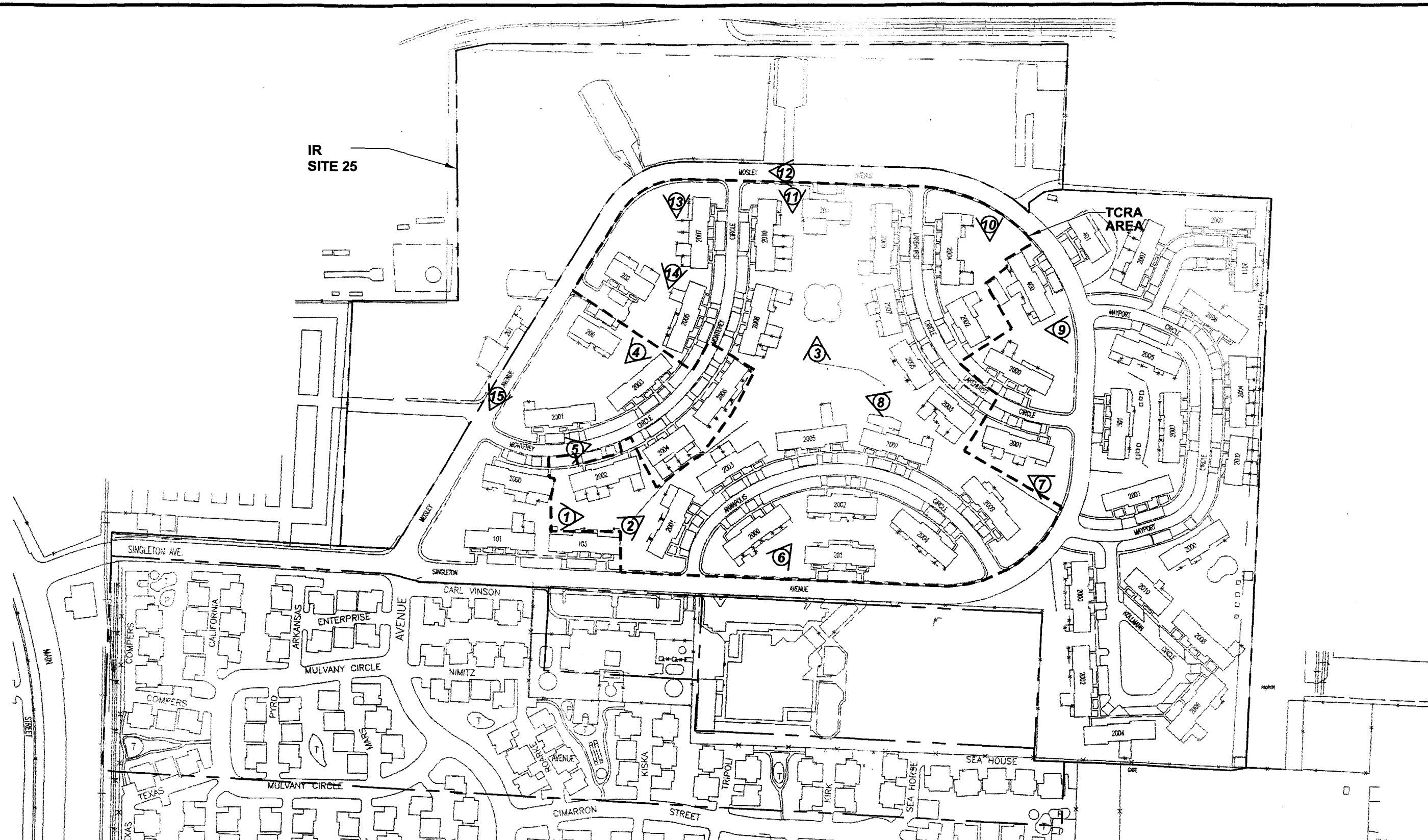
Each housing complex consists of multiple units with wooden-fenced yards in the rear of the units that generally open up to the interior grass-covered common areas. The grass common areas extend between and behind each housing complex and cover the interior portion of the site forming a large contiguous greenbelt. Three sandpits with concrete borders are located within the

greenbelt areas that are within the boundaries of the TCRA area. Two of the sandpits (one in the northwest and one in the central portion of the site) were set up as child play areas and included playground equipment. The other sandpit located in the southwest corner did not have any play equipment and may be used as a horseshoes gaming area. The larger of the three child play areas, a cloverleaf shaped area located in the central portion of the site, is not going to be addressed during this TCRA as previous remediation for this area was completed recently during construction of this play area facility.




The TCRA area is generally flat. Storm drains are located along the primary thoroughfares (Mosley and Singleton Avenues) around the perimeter of the site. A network of concrete swales and subsurface storm drains and piping is located within the grass-covered common areas within the interior of the site. Two groundwater monitoring wells were noticed in the southern portion of the site, one at the corner of Annapolis Circle and Singleton Avenue and one at the other intersection of these two streets approximately a quarter-mile to the east. Utility poles, guide wires, and overhanging utility lines are located throughout the site.

Surface water bodies are not within the site boundaries nor are they immediately adjacent to the site. Due to the disturbed and developed nature of the site, there are not any sensitive or critical habitat or biota on the site. However, several large trees were noticed around the north side of the site along Mosley Avenue, and several medium to large trees were noticed outside the fenced backyards of several units throughout the site. Squirrels and squirrel burrows were also noticed throughout the common areas. Descriptions of pertinent information about specific resources in the area of the site are presented in a separate Environmental Protection Plan.

FIGURES



LEGEND:

-  PHOTO LOCATION AND DIRECTION
-  TIME-CRITICAL REMOVAL ACTION (TCRA) BOUNDARY
-  IR 25 SITE BOUNDARY

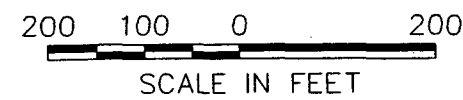


Figure J.1-1
 PHOTO LOCATIONS

POINT ALAMEDA - IR SITE 25

FOSTER WHEELER
 ENVIRONMENTAL CORPORATION

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02020611.DWG

DCN: FWSO-RAC 02-0206

CTO: #0040

APPROVED BY: AE

CHECKED BY: VR

DRAWN BY: MD

REVISION: 0

DATE: 11/16/01

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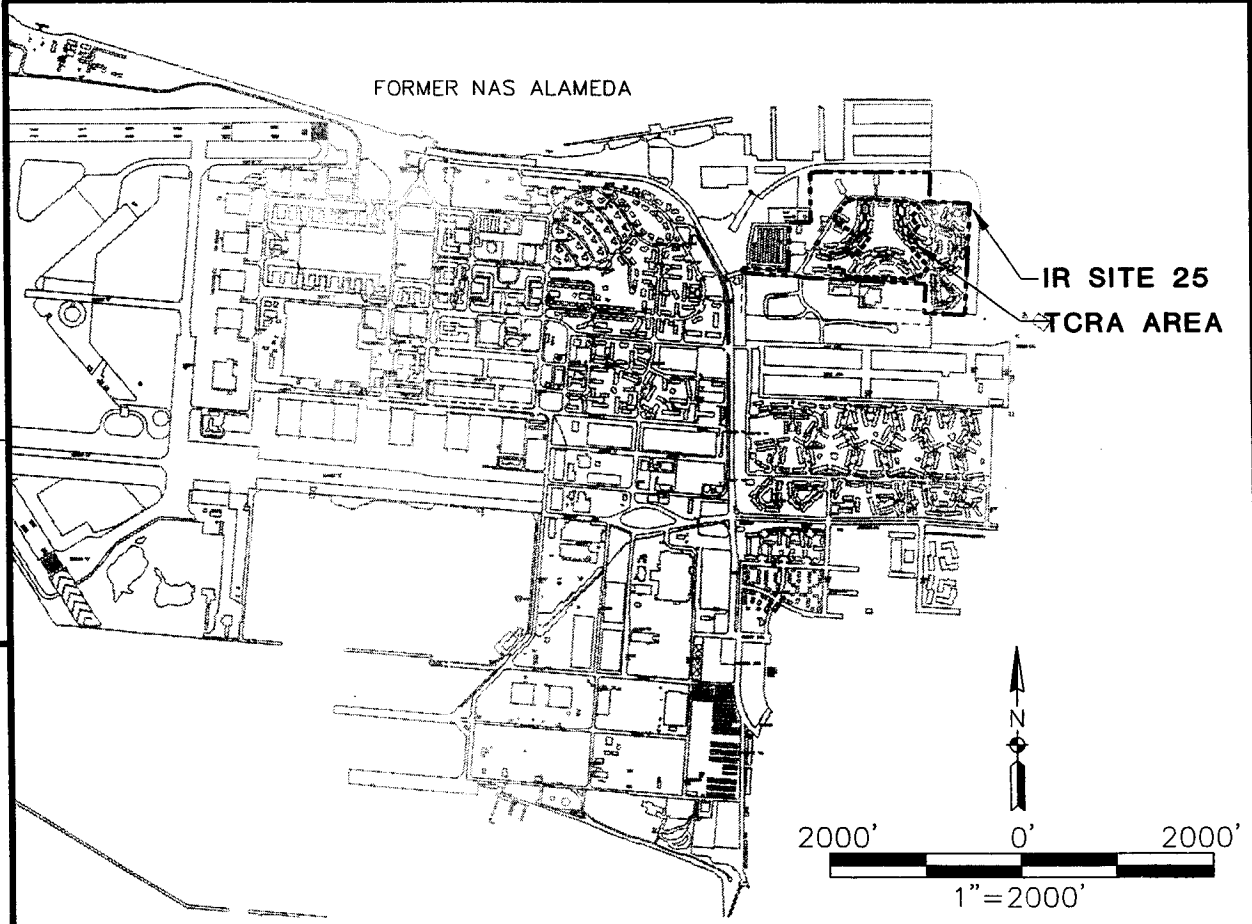
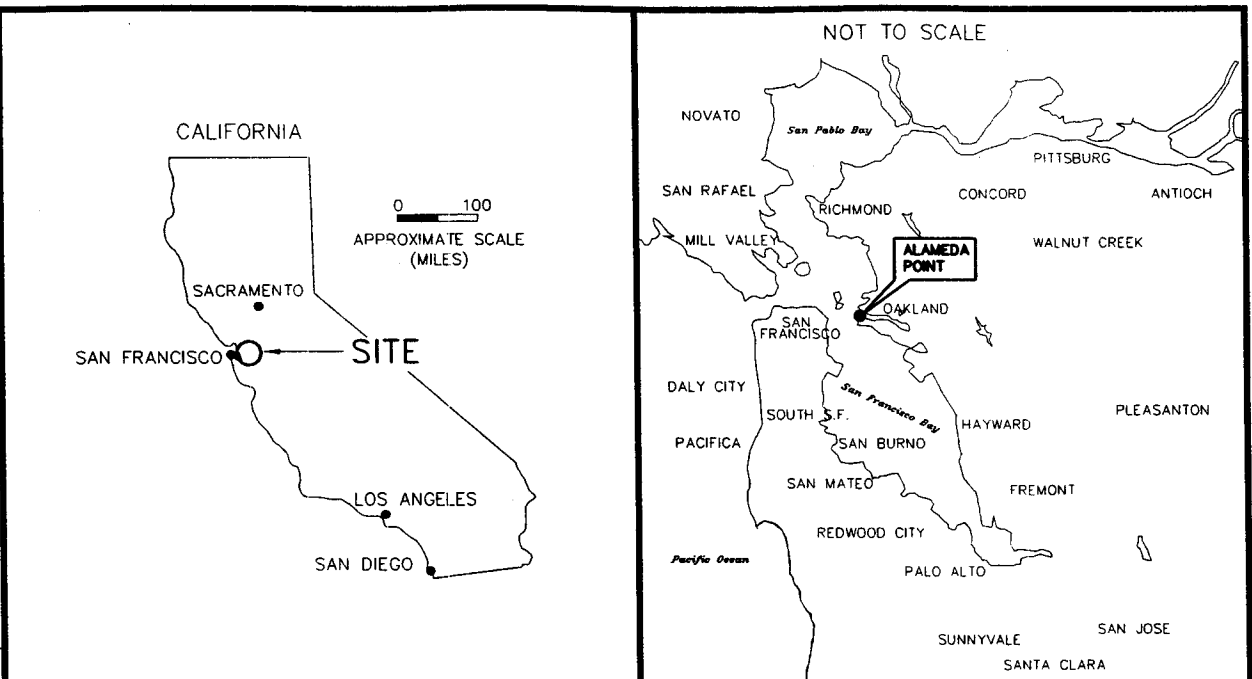
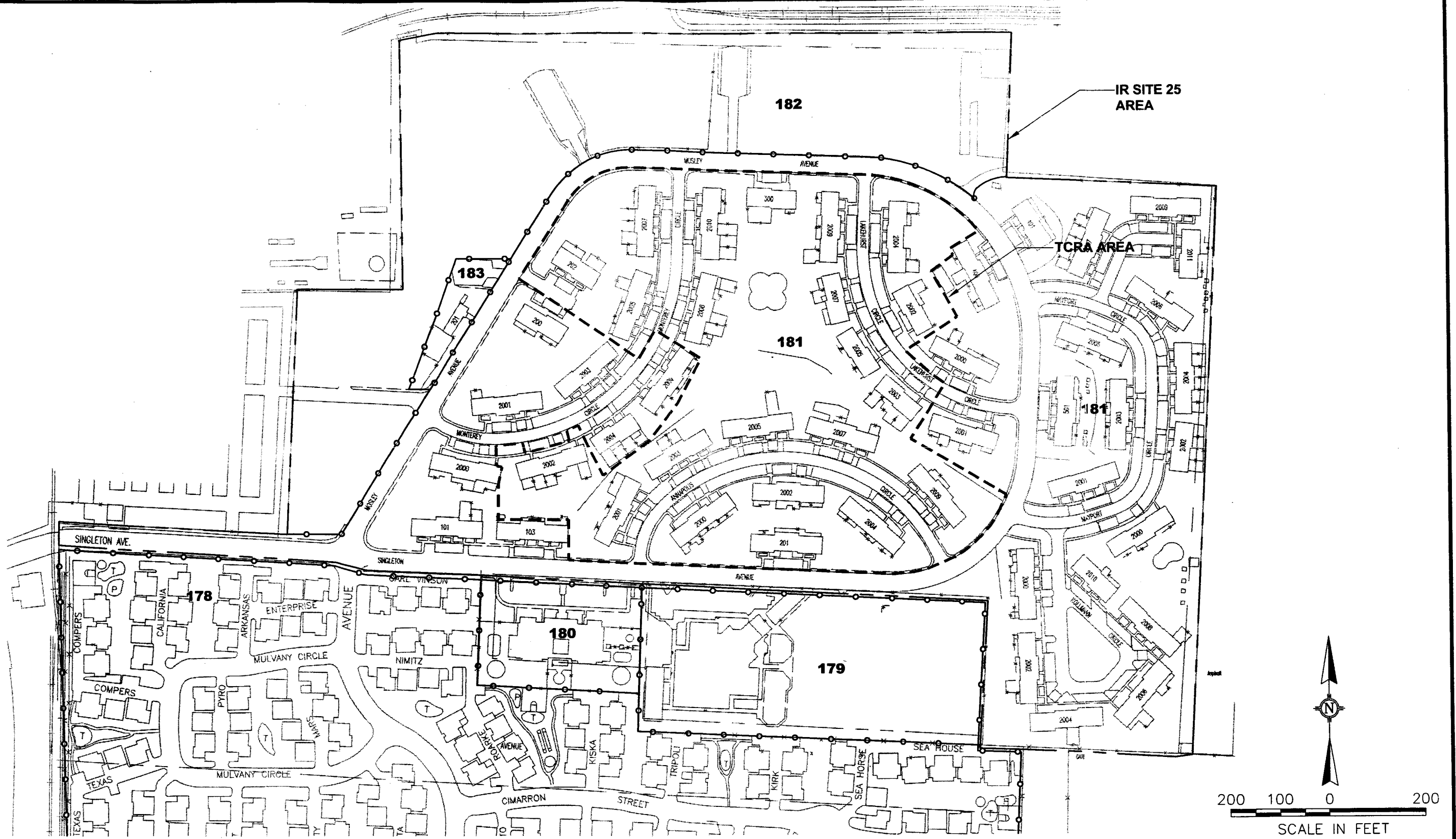


Figure J.1-2
SITE VICINITY MAP

ALAMEDA POINT - IR SITE 25


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ENVIRONMENTAL CORPORATION



- LEGEND:**
- TIME-CRITICAL REMOVAL ACTION (TCRA) BOUNDARY
 - IR 25 SITE BOUNDARY
 - ENVIRONMENTAL BASELINE SURVEY (EBS) PARCEL BOUNDARY
 - 181 EBS PARCEL NUMBER

Figure J.1-3
SITE LOCATION MAP

ALAMEDA POINT - IR SITE 25

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ENVIRONMENTAL CORPORATION

ATTACHMENT 1

PHOTO LOG

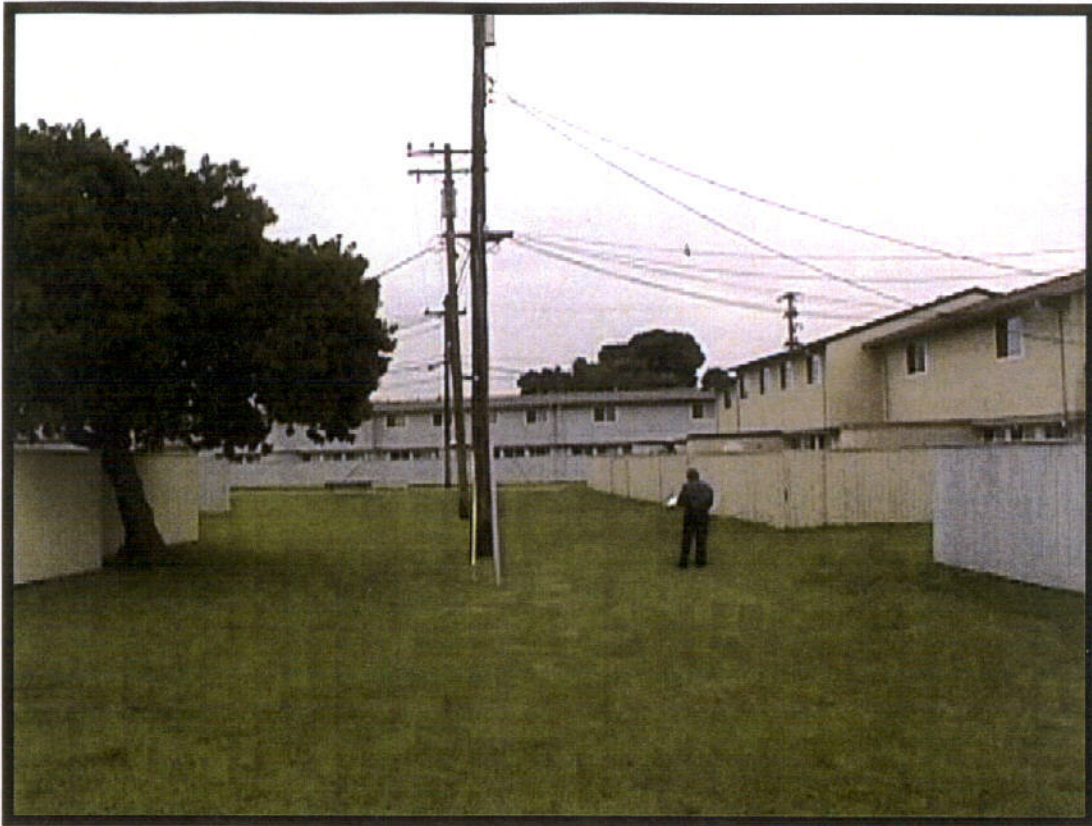


Photo 1: Facing east from southwest corner of the site. Note grass-covered common area between buildings and telephone pole utilities.



Photo 2: Facing northeast from southwest portion of the site. Note storm drain and concrete drainage swale.



Photo 3: Facing north from central portion of the site. Note child play area that will not be affected by the TCRA activities.



Photo 4: Facing west toward Mosley Avenue in an area of the housing community located slightly west of the area to be addressed in the TCRA.



Photo 5: Facing east along Monterey Circle showing a representative view of the front side of homes in the area.



Photo 6: Facing northeast from Singleton Avenue along the southern portion of the site. Note typical backyard fencing and grass-covered common areas between housing units.



Photo 7: Facing northwest from Singleton Avenue toward the central portion of the site. Note the presence of large trees in the area.



Photo 8: Facing west in the central portion of the site and showing large grass common area located between and behind housing units.



Photo 9: Facing west from Mosley Avenue in an area slightly east of the TCRA area.



Photo 10: Facing south from Mosley Avenue in the northeast portion of the site. Note backyard fencing, large trees, and squirrel burrows.



Photo 11: Facing south from the northern portion of the site.
Note backyard fencing, telephone utilities, and large trees.



Photo 12: Facing west along Mosley Avenue in the northern
portion of the site. Note large trees along parkway.



Photo 13: Facing south from northern portion of the site showing one of the child play areas within the area of the TCRA.



Photo 14: Facing southwest along a common area in the northwestern portion of the site.



Photo 15: Facing south along Mosley Avenue in an area slightly west of the TCRA area.

APPENDIX K
STORMWATER MANAGEMENT PLAN

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-98-D-5713
CTO No. 0040

APPENDIX K
FINAL
STORMWATER MANAGEMENT PLAN
Revision 0
November 26, 2001

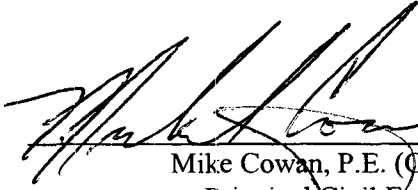
CERCLA TIME-CRITICAL REMOVAL ACTION
AT INSTALLATION RESTORATION SITE 25
ALAMEDA POINT
ALAMEDA, CALIFORNIA

DCN: FWSD-RAC-02-0206



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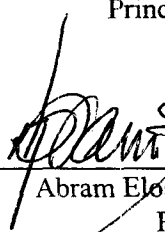

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Project Manager

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- Attachment 2 Best Management Practices Details
- Attachment 3 Site Inspection and Monitoring Reporting Forms

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Figure K.1-2 Site Location Map

Figure K.2-1 Storm Drain Map and Construction BMPs

ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
BMP	Best Management Practice
COC	chemical of concern
DON	U.S. Department of the Navy
ESC	erosion and sedimentation control
FWENC	Foster Wheeler Environmental Corporation
IR	Installation Restoration
PAH	polynuclear aromatic hydrocarbon
RWQCB	Regional Water Quality Control Board
SWM	surface water management
SWMP	Stormwater Management Plan
TCRA	time-critical removal action

1.0 INTRODUCTION

1.1 GENERAL

This Stormwater Management Plan (SWMP) for construction activities presents the measures to be implemented to minimize sediment and other pollutants in stormwater discharges during remedial activities at Operable Unit-5 [synonymous with Installation Restoration (IR) Site 25] Alameda Point, Alameda, California. The project will consist of excavating approximately 10.5 acres to a depth of 2 feet and backfilling with imported fill and placement of sod.

This SWMP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and (2) to describe and ensure the implementation of practices to reduce sediment and other pollutants in stormwater discharges during construction activities. The SWMP includes Best Management Practices (BMPs) that address source reduction.

This plan has been prepared for the U.S. Department of the Navy to comply with the substantive requirements of the National Pollutant Discharge Elimination System program, specifically the General Construction Activity Storm Water Permit program as set forth by the State of California Regional Water Quality Control Board in August 1999 (99-08-DWQ). Regulated sites, including "site grading over 5 acres", are generally required to develop a Stormwater Pollution Prevention Plan and a Stormwater Monitoring Sampling and Reporting Program however, the time critical removal action (TCRA) is an on site response action defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and no federal, state or local permits are required.

Elements of the SWMP include:

- Site Description (Section 2.0)
- BMPs to be Implemented for Construction Activities (Section 3.0)
- Erosion and Sediment Controls (Section 4.0)
- Non-Stormwater Management (Section 5.0)
- Waste Management and Disposal (Section 6.0)
- Implementation of Other Approved Plans (Section 7.0)
- Proposed Post-Construction Controls, including Description of Local Post-Construction Erosion and Sediment Control Requirements (Section 8.0)
- Site Inspections and Monitoring (Section 9.0)

The BMP activities presented in this document provide measures and controls necessary to mitigate potential pollutant sources. Supporting site maps, plans, details, and calculations, along with site-specific inspection and monitoring reporting forms, are provided in the Appendices.

The climate in the project area is Mediterranean (NOAA division CA-04: Central Coast) with moderate year-round temperatures and a winter rainy season. The SWMP drainage system during construction is designed to control greater than the 10-year, 6-hour rainstorm event. The permanent site stormwater drainage controls will accommodate runoff flows from the 25-year, 24-hour rainfall event.

1.2 PROJECT OVERVIEW

The Removal Action Work Plan has been prepared to describe the scope of a time-critical removal action (TCRA) at IR Site 25 Alameda Point, Alameda, California (see Figure K.1-1, Site Vicinity Map). The purpose of the action is to remove contaminated soil located in the TCRA area. The U.S. Department of the Navy (DON), Southwest Division Naval Facility Engineering Command has retained the services of Foster Wheeler Environmental Corporation (FWENC) as general contractor to conduct the removal action at this site.

IR Site 25 is located within the National Priority List as a portion of the former Naval Air Station Alameda and is comprised of approximately 42 acres divided into three parcels; Parcel 181 (Coast Guard Housing Area), 182 (Estuary Park), and 183 (Coast Guard Housing Management Office) (see Figure K.1-2, Site Location Map). The TCRA area is approximately 14 acres and is located entirely within Parcel 181. U.S. Coast Guard employees and their families are currently occupying approximately 21 multiunit housing structures within IR Site 25, under lease from the DON.

Previous IR Site 25 investigations have revealed the presence of polynuclear aromatic hydrocarbons (PAHs) in the soil. It is believed that the fill material used to create additional land for Alameda Island was contaminated with PAHs. These PAHs are believed to have originated from historical industrial activities in adjacent areas and are ubiquitous in the fill material. Several historical industrial operations that are likely to have released petroleum hydrocarbons were located in the vicinity of present-day Alameda Point. In particular, a manufactured gas plant that used oil (most active from 1903 through 1930) existed on the waterfront in Oakland and an oil refinery (Pacific Coast Oil Works) operated from about 1864 to 1899 at the western tip of pre-fill Alameda. Releases of oil and by-products are believed to have resulted in widespread contamination of the former Oakland Inner Harbor shoreline and tidal channels. Subsequent fill events in IR Site 25 are believed to have (1) contaminated the fill and (2) trapped this contamination in a zone of elevated PAHs and petroleum hydrocarbons described in reports as the "marsh crust". The marsh crust is defined as the remnant of the tidal marsh that existed along the shoreline of Alameda Island before filling to create additional dry land.

The proposed TCRA at IR Site 25 will reduce soil contaminant concentrations to acceptable levels and be protective of human health by preventing exposure to the contaminated soil. This will be accomplished through excavation and off-site disposal of the contaminated soil at an appropriate disposal facility approved by the U.S. Environmental Protection Agency to accept Comprehensive Environmental Response, Compensation, and Liability Act off-site waste.

By doing this, the removal action will substantially eliminate the identified pathways of exposure to hazardous substances [such as, the primary chemicals of concern (COCs)] for current and future users of the site. The COCs addressed by the TCRA are seven carcinogenic PAHs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-c,d)pyrene]. The removal action at the TCRA area focuses only on potentially unacceptable human health risk concerns in soils. Groundwater is not included within the scope of this removal action.

2.0 SITE DESCRIPTION

The following section describes the physical setting including weather at the site in addition to a brief discussion of construction activities and potential pollution sources.

2.1 SITE LOCATION

The TCRA area is located within the city of Alameda, Alameda County, California, approximately 2¾ miles west of Alameda City Hall. The TCRA area is within the Coast Guard housing area, southeast of the Alameda Gateway Ferry Terminal. Construction will consist of site grading and stormwater management.

2.2 CLIMATE AND PRECIPITATION

Since 1970, monthly average temperatures in the IR Site 25 area have exhibited a seasonal pattern ranging from winters of approximately 45 to 61 degrees Fahrenheit (°F), to summer temperatures ranging from 56-74°F.

The closest long-term precipitation gage is located at Oakland Museum, National Climatic Data Center COOP ID 046336, 1½ miles northeast of IR Site 25, at an elevation of 194 feet mean sea level. Between October 1970 and December 2000, the amount of rainfall at that location had a mean of 23 inches per year. Most of this precipitation occurs during the months of October through April, while summers are relatively dry.

The California Department of Water Resources has compiled precipitation frequency data for all of Alameda County. These precipitation data are used in the sites hydrology calculations for estimating stormwater runoff from the TCRA area and are provided in Attachment 1 of this SWMP. A summary lists the average rainfall amounts by month over a continuous 30-year period from 1970 through 2000, as recorded at the Oakland Museum Meteorological Station (Western Regional Climate Center, 2000) is shown in Table K.2-1.

Table K.2-1. Mean Monthly Rainfall Amounts At Oakland Museum, Alameda County, CA (inches)

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0.07	0.10	0.31	1.36	3.35	3.24	4.85	4.40	3.56	1.35	0.59	0.12

Annual Mean = 23 inches

Source: <http://www.wrcc.sage.dri.edu/cgi-bin/cliGCStP.pl?caokmu>

2.3 EXISTING STORMWATER CONVEYANCE SYSTEM

The stormwater drainage system consists of two major drainage control elements: surface drainage to streets, gutters, inlets, and subsurface conveyance storm drain lines. A network of ditches and swales convey stormwater from the TCRA area to existing storm drain inlets that allow drainage through a storm drain system. The existing stormwater runoff discharge points consist of the following:

- Grate inlets throughout the TCRA area with connections to the storm drainpipe that eventually discharges to the Inner Harbor.
- Stormwater also sheet flows to the streets in the area, into gutters, and to the storm drain system.

The drainage swales, ditches, and storm drain lines will not be modified as part of the final construction activities.

2.4 CONSTRUCTION ACTIVITIES

The following is a general description of the TCRA area construction activities and the stormwater management control system.

Soil stockpile operation is planned to be in the northern section of IR Site 25. This activity would include the implementation of the BMPs for silt control.

Soil excavation activities will consist of loading and hauling the top 2 feet of existing soil material. There is a possibility that stockpiling of contaminated soil will be required during construction. Contaminated soil will be placed on a liner in a bermed area and soil will be covered daily. BMPs will be used as required (silt fence and sandbags).

Rough grading will involve earthwork and fill to establish finished grade elevations. Following rough grading, sod will be placed.

Silt fences and sandbag berms will be used to trap sediment in areas disturbed by construction activities. Silt fences will be employed down-gradient of active construction areas. Active construction area BMPs will be implemented in accordance with those shown in Figure K.2-1.

Following completion of rough grading, berms will be provided to prevent stormwater runoff from entering the excavation if a storm is likely. The roadway subgrade will be fine graded and area drainage swales will be graded to direct stormwater runoff from the TCRA area. The finish graded surface area on site and the disturbed areas off site will be sodded for erosion protection. A temporary irrigation system may be installed by the Coast Guard and used in localized areas for the establishment of the vegetation after final grading. These waterlines should be inspected daily for excessive runoff when in use.

Following final grading and sodding, when stabilized erosion conditions are achieved and the post-construction stormwater management system is complete, a construction permit notice of termination will be filed.

2.5 CONSTRUCTION SEQUENCE

The phased construction sequences will be provided by the contractor and approved by FWENC. The phased construction activities will generally follow the sequence of the design packages. Storm Drain Map and Construction BMPs, Figure K.2-1, was developed for the grading construction phase of the project and will be updated as specialty work progresses.

2.6 SOURCE IDENTIFICATION

2.6.1 Potential Pollutants During The Construction Phase

Hazardous materials used during construction will include gasoline, diesel fuel, motor oil, hydraulic fluid, and various lubricants. Acutely hazardous materials will not be used or stored on site during construction. There are not any feasible alternatives to motor fuels and oils for operating construction equipment.

There is only minimal potential for environmental impacts from hazardous material incidents during construction. Small volumes of hazardous materials will be temporarily stored on site inside fuel and lubrication service trucks. Paints and solvents will be stored in flammable materials cabinets.

The most likely incidents involving these hazardous materials would be associated with minor spills or drips. Impacts from such incidents will be mitigated by thoroughly cleaning up minor spills as soon as they occur. An incident involving a service vehicle or refueling truck release would present the worst-case scenario for release of hazardous materials. In the case of a large spill of hazardous material, the area would be immediately bermed/contained followed by blocking of the nearest storm drain inlets to prevent off-site release. The spill would be reviewed by the Project Superintendent to determine if the DON and any regulatory agencies need to be notified. A large spill or release cleanup would most likely involve excavation and storage of the impacted soil and/or materials in drums or roll-off bins for off-site disposal or recycling. The method for off-site disposal or recycling selected will depend on how the waste is classified.

3.0 BMPS TO BE IMPLEMENTED FOR CONSTRUCTION ACTIVITIES

BMPs for construction activities that may pollute stormwater are described in the following section. Attachment 2 provides detailed construction implementation descriptions for the activity and a construction activity reference numbers (such as CA31) can be found in parentheses behind the BMPs indicated below. Additional BMPs may be developed as necessary prior to each construction phase. The BMPs for construction activities that may pollute the stormwater are given focuses on the following potential pollutant sources:

- Contaminated fine-grained soil (silt) from the excavation suspended in stormwater runoff
- Hazardous waste including fuel, oil, and lubricant spills
- Erosion of contaminated soil stockpiles built during construction
- Solid waste from construction activities

Good housekeeping and maintenance practices are key factors in reducing potential off-site migration of pollution. These practices shall include elimination of brush, litter, or other items including solid waste that may clog drainage devices or enter the stormwater flow from the TCRA area. In addition, sediment trapping/filtering devices and energy dissipaters (if utilized) will be maintained to ensure that sediment clogging does not take place and to ensure the required level of effectiveness. Either the same or upgraded control devices will replace all in-place erosion control devices that are damaged. The achievement of good housekeeping and maintenance at the site also requires employee participation and requires specific training and control systems. The following BMPs that will be implemented at the site are essential to maintain site control of potential pollution sources.

3.1 SPILL PREVENTION AND CONTROL (CA12)

The work at the site will be conducted under specific procedures developed by FWENC and include a Site-Specific Health and Safety Plan in addition to a Waste Management Plan. These documents are maintained on site and outline the specific steps the Site Superintendent will follow in the case of a spill or release.

3.2 SOLID WASTE MANAGEMENT (CA20)

All construction waste shall be disposed in dumpsters, roll-off bins, or other similarly approved containers in designated areas located throughout the TCRA area. Specific procedures to handle all types of waste expected at the site have been developed by FWENC and are included in the Waste Management Plan. The plan will be maintained at the site.

3.3 HAZARDOUS WASTE MANAGEMENT (CA21)

The potential hazardous waste at the site includes fuel, oil, and lubricant spills or releases. Specific procedures to handle all types of waste expected at the site have been developed by FWENC and are included in the Waste Management Plan. The plan will be maintained at the site.

3.4 CONTAMINATED SOIL MANAGEMENT (CA22)

The removal activities have been planned to coordinate the excavation of the contaminated soil with the immediate loading and transportation of the material off site. However, contingencies have been made to temporarily store contaminated soils on site in the designated staging area. A lined, bermed area will be prepared, and any stockpiles will be covered with an appropriate material to prevent erosion. Appropriate BMPs will also be placed around the stockpile and the staging area to ensure the prevention of sediment transport.

3.5 VEHICLE AND HEAVY EQUIPMENT FUELING (CA31)

3.5.1 Diesel Fuel

During construction activities, diesel fuel will be delivered and pumped directly into the equipment. When diesel fuel is delivered and pumped directly into the heavy equipment, fueling will occur in designated areas which are located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills. If a spill occurs during on-site fueling activities, the individual noting the spill will be responsible for contacting the FWENC Project Superintendent who will notify the DON who is responsible for notifying regulatory authorities as necessary and managing the cleanup and removal of contaminated soils in accordance with regulations.

3.5.2 Gasoline

Gasoline used for passenger vehicles and trucks will be obtained from off-site filling stations.

If any spill occurs during on-site fueling activities, the fueler will be responsible for contacting the FWENC Project Superintendent for cleanup and removal of contaminated soils.

All heavy equipment and vehicles used for the TCRA are inspected at the beginning and end of each workday for oil and lubricant leaks. Leaking equipment will be repaired or removed from service and small leaks will be cleaned up immediately. Excessive greasing of components will be avoided and accumulated grease will be wiped off and the contaminated rags properly disposed of off site. All oil and lubricant supplies will be securely stored in drums or bins in the heavy equipment and maintenance area to prevent an uncontrolled discharge of spilled materials.

3.6 VEHICLE AND EQUIPMENT MAINTENANCE (CA32)

3.6.1 Heavy Equipment

Heavy equipment oil changes and maintenance will normally be performed by off-site mechanics. In the event that a spill associated with the heavy equipment (i.e., diesel, hydraulic fluid or gas leak) occurs, the FWENC Project Superintendent will be notified, the spill area will be excavated, and the material containerized and stored in the heavy equipment and maintenance area until proper off-site disposal.

3.6.2 Site Vehicles

Oil changes and maintenance for site vehicles will normally be performed by off-site mechanics.

3.7 EMPLOYEES/SUBCONTRACTOR TRAINING (CA40)

FWENC primary work policies are centered on requiring extensive training for their employees and any subcontractor working on a FWENC site. Each employee is required to current with appropriate federal hazardous waste training requirements and other training programs as defined in the Site-Specific Health and Safety Plan prepared for the work. FWENC requires each subcontractor to attend daily safety meetings at the work site and each work phase is reviewed in project orientation meetings. These meetings discuss potential problems, including stormwater control, and review the site actions that will occur in the event of any particular situation.

4.0 BMPS TO BE IMPLEMENTED FOR EROSION AND SEDIMENTATION CONTROL

BMPs for erosion and sediment control (ESC) can be found in Attachment 2 and will be referenced and implemented (as necessary) during construction activities. ESC reference numbers (for example, ESC1) can be found in parentheses behind the BMPs indicated below.

4.1 CONSTRUCTION SEQUENCE (ESC1)

Grading construction will be sequenced to minimize the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking.

4.2 PRESERVATION OF EXISTING VEGETATION (ESC2)

Vegetation on the site will be preserved until the time that construction is expected to commence in that area. The preservation of existing vegetation shall be maximized where feasible. During construction, the limits of grading or disturbance will be clearly marked in order to segregate this area from areas of preserved vegetation.

4.3 TRACKWALKING

During final subgrade soil grading activities in a particular area, a dozer and/or similar piece of heavy equipment will be utilized to trackwalk the soil (driving a bulldozer and/or similar piece of equipment over backfilled areas). Trackwalking will compact soil to hold it in place.

4.4 SODDING (ESC10)

Following final grade development in a particular area, the site will be smoothed, dressed, and sodded as soon as possible. A temporary irrigation system may be used in localized areas to promote rapid establishment of the sod.

4.5 DUST CONTROLS (ESC21)

Dust control measures will be used to stabilize soil from wind erosion, and reduce dust generated from the following construction activities: clearing and grading activities, construction vehicle traffic on unpaved areas, sediment tracking onto paved roads, and areas of unstabilized soil stockpiles. Water trucks will be utilized for dust control. The source of water for the truck will be the city public water supply system. In addition to wet suppression (watering), preventative measures to be used for dust control include minimizing disturbed surface areas, limiting on-site vehicular traffic and speed, and controlling the number and activity of vehicles on the site at a given time.

4.6 BORROW MATERIAL STOCKPILE AREAS

During grading activities, several areas will be used to stockpile soil. The soil will be stockpiled in a generally uncompacted condition prior to placement, and is therefore, subject to erosion. In addressing stockpiling, BMPs will include diversion of drainage from the stockpile areas (ESC31), placement of additional sandbag desilting facilities (ESC52), silt fencing on down-gradient toe of stockpile slope (ESC50), and dust control (ESC21). In addition, large stockpiles will be sloped to encourage sheet flow and reduce the infiltration of rainwater.

4.7 DRAINS (ESC32)

There are major drain inlets that will convey stormwater to the existing storm drains and harbor. The drains consist of conduit placed to allow flow by gravity. The locations of these drains are indicated in Figure K.2-1. The drains will be protected from heavy sediment runoff and will be a point of monitoring if needed.

4.8 SILT FENCE AND SANDBAGS (ESC50 AND 52)

Silt fence and sandbags will be used as a sediment trapping/filtering device downgradient of all disturbed areas where sheet flow occurs. Silt fences will be installed on a level contour receiving no more than 1 acre of runoff per 100 linear feet or 0.5 cubic feet per second of concentrated flow draining to any point along the silt fence. Sandbags will be installed on level contours receiving drainage areas up to 5 acres. Locations where silt fence and sandbags are be used at IR Site 25 include:

- Along the perimeter of the site
- Around and downgradient from soil stockpile areas
- Below cleared active construction areas

5.0 NON-STORMWATER MANAGEMENT

Management of non-stormwater discharges will be implemented as part to this SWMP. In addition to wet/dry season observations, weekly inspections of the grading, vegetative cover, roads, and stormwater/erosion control structures (including secondary containment structures) will be conducted. Any authorized or unauthorized non-stormwater discharges, if observed, will be documented on the appropriate form in Attachment 3 of this SWMP

6.0 WASTE MANAGEMENT AND DISPOSAL

Residuals and wastes are generated by construction and site operation activities. Waste management involves the following four steps:

1. Characterization
2. Handling and storage
3. Transportation
4. Disposal or recycling as appropriate

The site specific Waste Management Plan provides detailed information on the above steps.

7.0 IMPLEMENTATION OF OTHER APPROVED PLANS

Several site specific management plans approved by FWENC and the DON have been implemented to provide a framework by which the construction and site operations are executed. These plans describe the methods that will be used to execute, integrate, and coordinate emergency response procedures, control quality, address safety and health, and generally perform the work in a sound manner.

8.0 POST-CONSTRUCTION CONTROLS

This SWMP provides detailed descriptions of the post-construction surface water management (SWM) system. The SWM system includes the following components:

- General grading
- Storm drains
- Catch basin box
- Concrete curb and gutter
- Vegetative cover

9.0 SITE INSPECTIONS AND MONITORING

All stormwater pollution prevention measures and BMPs will be inspected prior to the rainy season and before (prediction of) and following (measurement of) each rain event of 0.25 inches per 24 hours or more. This inspection will allow for evaluation of the BMPs implemented to prevent the release of potential pollutants. All inspections shall be done by trained personnel and the appropriate forms shall be filled out. These forms are provided in Attachment 3 of this SWMP. Inspections will include the date of the inspection, the individual(s) who performed the inspection, and the observations. Any BMP inadequacies shall be recorded and modified and upgraded or repaired as soon as possible. All completed inspection forms shall be retained at the FWENC office for a period of at least 3 years.

Water sampling shall be taken should visual monitoring indicate that there has been a breach, malfunction, leakage, or spill from a BMP which could result in the discharge of pollutants from the site.

10.0 RESPONSIBLE PERSONNEL

The responsible individuals for implementing and making any necessary revisions to this SWMP are the following personnel, which comprise the Pollution Prevention Team:

Name	Title	Responsibility
Mike Cowan, P.E.	Civil Engineer	Preparation of SWMP and selection of BMPs. Revisions to the SWMP.
James Baldwin	Project Superintendent	Implementation of construction SWMP, maintaining inspection and monitoring records, reporting, and regulatory notification.
Craig Rice	Project Quality Control Manager	Implementation of inspection and monitoring activities of the SWMP and BMPs.

11.0 PERSONNEL TRAINING

All personnel involved with the ongoing monitoring and maintenance of the stormwater management system will attend a training class held by the Project Superintendent, or their designee, before the beginning of the soil excavation phase of construction. The Project Superintendent will maintain a file of the training documentation. The SWMP program will be reviewed as it relates to the various responsibilities for personnel implementation and awareness.

12.0 CERTIFICATION OF COMPLIANCE

FWENC and the subcontractors will implement and comply with the program set forth above. Within 30 days of noncompliance, FWENC and/or the subcontractors will correct or submit a schedule for necessary corrections. Written certification that the corrections were undertaken will be issued to the DON upon completion of the activities.

13.0 SWMP REVIEW AND MODIFICATIONS

FWENC intends to amend this SWMP, if deemed necessary, to address changes in the physical condition of the TCRA area or to maintain compliance in areas where this SWMP is inadequate.

14.0 REFERENCES

Western Regional Climate Center. 2000. *Period of Record General Climate Summary – Precipitation*. Available: <http://www.wrcc.sage.dri.edu/cgi-bin/cliGCStP.pl?caokmu>. June.